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How Theories of Meaning Resemble Attributed Situations:

Methodological Suggestions for Representing How People Conceive the Contents of Theories of Meaning, Extracting Signifiers' Identity Conditions, and Measuring Domains for Allowed Influences

Doctoral Thesis

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January 2020

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PhD Thesis, Spring 2020

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Abstract:

This thesis develops methods for representing how the contents of theories of meaning become conceived by their users. These contents are treated as the range of systematically elicited conceptions afforded by a designated corpus of key texts. The approach being taken involves first detailing a formal scheme for the components of situations attributed to various entities (e.g. 'your situation'). This scheme is then applied as a framing device to form a template which accounts for the shared structure between the mental spaces which embody how people conceive different theories of meaning. For the purposes of this task, cognition is treated as embodied in the sense that both the form and content of personal conceptualisations are largely dependent on what both bodily and ecological factors afford.

The purpose of this approach is to help understand how theories operate when viewed as worldly entities within a materialist framework. The significance of such understanding lies in enabling analyses and comparisons which account for the effects of material restrictions such as how a theory's presentation must necessarily be selective and how human cognition operates on models set by precedent. The framework being provided here allows the conceptions each individual theory of meaning elicits to be reduced to formal, commensurate models which account for differences between typical influences on the conceptions characteristic of different demographics such as experts of related fields. Approaching theories of meaning from this angle also reveals new avenues of comparison concerning otherwise implicit details. One involves theory-internal conditions on the full material identity of meaning-instantiating entities. The other concerns the extent of the domains for aggregating applicable influences for which a theory accounts and the range of those it may accommodate.

Total length (excl. appendix and references): 80 441 words

Keywords: affordance, cognitive metaphor, conception, frame, embodiment, identity, materialism, mental space, metasemantics, methodology, semantics, situation, set, template

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Chapter 01: Introduction

The manner in which people relate to theories of meaning is necessarily limited by how they conceive these theories' contents. This thesis provides a perspective to help highlight some of the involved material limitations. Theories of meaning – understood as models of the emergence of specific kinds of meaning – are treated as the ranges of possible conceptions which can be derived from designated corpuses. In this instance, such conceptions can be framed using a schematic structure shared with attributed situations – i.e. the circumstances of appointed entities ('your situation').

The provided perspective is intended to help identify heretofore underappreciated details about theories of meaning: how the versions with which people operate are subject to cognitively grounded contingencies, how the system-level requirements of presented models may complicate the identities of suitable signifiers, and how each expression of a theory may only present a limited selection of considerations. Such details ought to prove helpful in assessing the relative merits of theories of meaning with a fuller understanding of the range of involved considerations.

Enabling this perspective involves scaffolding in the form of a theoretical framework applied in an instrumentalist manner. Promiscuous realism allows for free partitioning of reality to fit any classification scheme. Being fallibilist about aperspectival objectivity prompts one to analyse the details of involved perspectives. Treating cognition as embodied provides a means to comprehensively source potential influences on conceptions and grounds focusing on available interactions and their effects.

1.1 Statement of Purpose

In the abstract of his 2001 paper 'Controversies and Epistemology' (Dascal, 2001, p. 159), Dascal calls out what he perceived as 'the impasse at which the philosophy and history of science in the last couple of decades'. His thesis can be summarised as work in these fields having been channelled solely to either *discussions* or *disputes*, neither of which bears the characteristics of a genuinely productive scientific *controversy*. Neither amiable solutions to mutually recognised problems nor debates about the proper approach between parties who agree on no single issue suffice to push a field in new directions according to him. What would instead be needed are issues on which parties agree but where their approaches diverge in a manner where associated attitudes can be evaluated relative to the mutually recognised issue at hand. Should one agree with this general notion that advancement in a field of philosophy requires grounding in mutually recognisable issues relative to which differences in approach can be evaluated, the means to uncover new venues for such productive disagreement hold value as (potential) enablers for further developments.

In the almost two decades since Dascal's paper, philosophy of science has arguably been revitalised in part by the rise of approaches which can be grouped under the title of 'the pragmatic view on the structure of scientific theories' (e.g. Hacking, 2007; Longino, 2013). The main contrast between prior accounts and this approach lies in the recognition of an explanatory role for particularity, whether in the form of non-formal influences or the limitations of the specific media being used. Hence, parallels can be drawn to how linguistic pragmatics focus on situated utterances over general semantic significance as at least a necessary component of a proper understanding of meaning. This work shares many such aspirations. The provided material is intended to help approach theories of (linguistic) meaning – specifically, so-called *foundational semantics* (Stalnaker, 1997)[1] concerned with the

[1] Some of the addressed examples belong in descriptive semantics which is concerned primarily with the assignment of specific meaning to linguistic items. However, while one may conceivably provide a theory about the nature of meaning without committing oneself to any specific descriptive theories, any descriptive theory which references extralinguistic factors appears bound to make *some* commitments concerning the sources of whichever meanings are being posited. In the case

dynamics which give rise to meaning as such rather than the resulting assignment of semantic values to expressions – in a new light. Any reference to 'theories of meaning' within this context ought to thus be understood as denoting the explanatory models proposed for explaining the emergence of meaning of *some* kind among entities of a specified type. The type of meaning in question may correspond to some manifest impression such as words having set meanings or utterances having clear interpretations in light of specific contexts. A theory may also posit a more technical notion in service of some other purpose but often *somehow* related to such manifest meaning such as when a formal representation of the intension of an indexical like 'it' is used to explain how the term gets used.[2] In the vein of the pragmatic approach, the explored perspective focuses on the characteristics of a specific field (foundational semantics) and the material conditions involved in the production and treatment of results – namely, theories of meaning – within that field. As such, theories are strictly speaking individuated based on associated corpuses and there can be several 'theories' in this sense for which the same name (e.g. relevance theory) is used. Clusters of such specific 'theories' share a family resemblance which allows them to be categorised into distinct theoretical approaches, however. The resulting models and methodological suggestions involving the retrieval and application of such models are intended to act as analytical tools,[3] primarily for philosophers of language and theoretical linguists.

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of a purely compositional theory, such commitments might be limited to the apparatus responsible for enabling the necessary operations while a theory of indexicals appears bound to posit a directly meaning-contributing relation between language and extralinguistic entities.

[2] In this instance, the foundational theory being that words possess properties or relate to certain facts in ways which define intensions specific to them which in turn designate their referents that substantiate said intensions – or a variant thereof.

[3] Authors such as Clark (1997) and Dennett (1996; 2000; 2013), inspired by Gregory's (1993, pp. 48–68) account of mind tools, argue that ideas act as tools and proper tools enable exceeding prior intellectual performance. While this work does not thus strictly speaking present a traditional philosophical thesis *statement*, developing instruments for philosophical inquiry ought to be of no less value than designing tools for any other worthwhile task. In particular, if the results of Bloom *et al* (2017) on the increasing relative cost of innovation can be generalised to human sciences, such further means of analysis help structure the increasingly sophisticated theoretical apparatuses around common frameworks and identify otherwise invisible issues to hopefully steer debates towards more productive tracks. For instance, distilling competing theories to similarly formatted

The exact approach being taken involves identifying a schema around which at least some necessary components of theories of meaning, specifically, may be structured for purposes of modelling the associated mental representations. This form of framing is not intended as the sole valid means of representing such content. However, applying it does reveal aspects of theories of meaning as they manifest in people's conceptions based on available sets of associated (written or spoken) texts. Specifically, the angle being applied is to focus on what sets of key texts[4] associated with a given theory of meaning (or variant thereof) present as prompts for people to construct corresponding mental models. The schema used to frame such models is derived from the notion of *attributed situations*, which seems to underlie specific expressions (e.g. 'your situation') but is formalised and has the conditions and resulting limits of its applicability charted here. This schema consists of (1) the central entity to which the situation is being attributed, (2) the constituents linked to the central entity by a set of recognised relations, and (3) an (implicit) observer to whose perspective said relations are available. Treating whichever kind of entity (e.g. a word) to which a theory attributes meaning as a similarly situated focal entity enmeshed within a set of relations a theory treats as definitive of its meaning as applicable sources of semantic influence replicates this structure.[5] The position from which said arrangement would be observed is primarily constituted by the perspective inherent

graphs of definitive relations between differently inclusive key entities ought to simplify directing comparisons and associated tests.

[4] 'If we wish to learn what a theory is from the standpoint of scientists who use the theory, one way to proceed is by examining the textbooks from which they learned most of what they know about that theory.' (Giere, 1988, p. 63). In the case of academic study of meaning, primary texts and particularly influential secondary texts appear to form a similar corpus for analysis. An interesting example is the difference between people familiar with relevance theory primarily either through the work of Sperber and Wilson (1995) or Carston (2002). The impression one gets is that the latter tend to emphasise the explanatory role of language of thought more and treat it as less idiolectic.

[5] The cause for drawing this connection involves how this work began as an attempt at creating a general model of the different levels of contextual influence (the immediate situation, personal beliefs and recollections, etc.) on meaning. This involved treating the various forms of (potentially) context-sensitive signifiers as worldly entities situated at the heart of a set of circumstances acting as potential context. How different theories define the context embodied in such circumstances so differently had prompted the original project. In time, it became apparent that applying the model to said theories of meaning to explain these differences would be more interesting.

in the material being presented in a necessarily selective manner as no text may accommodate the totality of possible participants in such scenarios.[6] This kind of cognitive orientation aligns with that of Giere (1988; 2006) as both focus on how human endeavours such as academic research ought to recognise the effects of the human element and be informed by related fields of research such as cognitive science.[7] As such, the models of how theories of meaning become conceived are constructed using concepts and dynamics borrowed from cognitive science, specifically research on embodied cognition (e.g. Lakoff & Johnson, 1980; Fauconnier & Turner, 2002).[8]

By itself, applying this angle allows theories of meaning to be approached from a perspective which ought to help identify the range of conceptions which each encompasses, the distribution of such conceptions, and the contingent influences responsible. While it is not being argued that theories of meaning ought to be *exclusively* identified with such conceptions linked to the designated sets of texts, recognising this dynamic as part of the material existence of said theories should enrich the overall understanding of their nature. Such understanding, in turn, ought to contribute to a more reflective treatment of such theories. For instance, if a theory

[6] 'The basic idea is that conception is a lot like perception, or, that theorizing is a lot like observing. More specifically, in creating theories, […] scientists create perspectives from within which to conceive of aspects of the world.' (Giere, 2006, p. 59).

[7] 'The starting point of cognitive psychology, and the cognitive sciences generally, is that humans have various biologically based capacities including perception, motor control, memory, imagination, and language. People employ these capacities in everyday interactions with the world. A cognitive theory of science would attempt to explain how scientists use these capacities for interacting with the world as they go about the business of constructing modern science.' (Giere, 1988, pp. 4–5)

[8] As is noted below, considerations involving embodied cognition are *not* being applied to understand some form of folk semantics. It is merely the approach to cognition selected for this work, largely for its focus on interaction between material conditions as an influence on the content of conceptions. In this context, theories of meaning need not be assumed to have a *special* relationship to the considerations in question. The defining contribution of this work is applying a cognitive approach to how people relate to the material expressing theories of meaning, and embodied cognition treating mental representations as not (solely) propositional allows the resulting conceptions to be treated as more than themselves uninteresting paraphrases of the texts. The highly abstract subject matter of such theories is *susceptible* to needing grounding in familiar models of observable phenomena via cognitive metaphors (e.g. Lakoff & Johnson, 1980), for instance. Differences in salient models such as whether utterances are understood primarily in terms of distinct replies in an oral exchange or (parts of) written publications result in distinct understandings.

relies on tractable cognitive biases in how people's mental reconstructions are affected by the chosen presentation for its appeal, this form of treatment can locate such influences for further assessment. This work itself provides guidelines for how to extract two forms of key details implicit in the structure of a theory of meaning relative to theories of meaning can be assessed.

The first detail which can be recovered based on this framing is the full material identity of the entities required to instantiate the form of meaning a theory posits. When a theory is not treated as a description of the world but a schematic model which only incorporates what the theory describes using available cognitive resources when conceived based on textual prompts,[9] one may study the nature of its elements with fewer commitments to folk realist presumptions. In this context, the main supposition would involve that theories explain the meaning of manifest signifiers of the sorts being named, e.g. theory-internal reference to 'utterances' *just* designating discrete linguistic tokens. Given how entities appropriate for the task a theory imposes on them must be able to participate in the correct positions in the relations definitive of their meaning, their material identity may be required to exceed such manifest instances. Such *full instantiators* can, for instance, incorporate some surrounding elements such as 'utterances' not only requiring recognisable linguistic forms but the associated intention-bearing neural states of an utterer if a theory only treats pairs of (reconstructed) intentions and externalised signals as meaningful and subject to whichever influences define their posited meanings.[10] This

[9] 'If we insist on regarding the linguistic formulations of principles as genuine statements, we have to find something that they describe, something to which they refer. The best candidate I know for this role would be a highly abstract object, an object that by definition exhibits all and only the characteristics specified in the principles. […] this abstract object is a very general model whose initial function is to characterize relationships among the elements of the world.' (Giere, 2006, pp. 61–62)

[10] It can be objected that the states embodying an intention (or reconstruction thereof) are merely a necessary form of influence. This formulation does not preclude the details of the intention from *also* acting as influences, however. All that would matter is how for purposes of such a theory, an incidental manifestation of a linguistic form such as the works of Shakespeare recreated by a thousand monkeys tied to typewriters would not qualify as being of the proper kind (until someone unfamiliar with said origins reconstructed some intent behind the results). Such a theory might even allow that such things embody meaning in certain other respects but not in the sense the theory itself addresses.

possibility that different theories involve materially different kinds of recipients of meaning even when they overlap in the form of a manifest focal entity or set of entities affords one venue of *systematically* assessing both individual theories and their differences from a new angle. Even if each theory were found to cohere with the baseline assumptions, access to such means of verifying whether that is the case would help secure more sustainable epistemic grounds for asserting as much.

The second detail concerns the extent to which the particular material under inspection accounts for available considerations and the limits of the set of principles expressed therein with respect to such *scope*. Whatever the aspirations of a theory might be in terms of the extent to which it accounts for possible considerations, the manner in which its presentation is implemented necessarily has its limits. These limits can then be expected to be reflected in the default conceptions engendered by engaging with said material, even if further considerations on part of the conceiver may adjust their conception of the theory in this respect. Given that more inclusive domains for aggregating suitable influences are not inherently more desirable,[11] the question of proper scope for a task (e.g. to what extend should it be inclusive of cross-temporal considerations if at all) can then be asked. Depending on the answer(s), the scopes different theories implement and those they can in principle support can then be assessed relative to the demands of the tasks each theory sets for itself. In practice, for example, such information can also be used to specify which forms of counterexamples are appropriate in a given context. Should a task be agreed not to be inclusive of cross-modal considerations, for instance, criticising an associated theory using an example which requires accounting for counterfactuals would constitute a foul. This second potential avenue of constructive discourse, intended to further hone the details of how specific theories are understood, thus focuses attention on principles for defining proper scope for the different tasks the-

[11] For instance, should one wish to retain intuitive referents for expressions such as 'the tallest mountain as part of a theory of definitive descriptions (e.g. Russell, 1905), one might wish to apply some form of domain restriction which adjusts the applied scope to only be inclusive of Earth, the local solar system, and so forth based on a general auxiliary principle.

ories of meaning address and especially the scope of considerations actually implemented in the relevant texts. That how a theory is understood need not be limited to what its author(s) present does not mean that this selection responsible for the boundaries of non-enriched conceptions can be overlooked. No matter how one treats the fundamental metaphysics of such theories, people's conceptions of their contents are with what we are forced to contend when operating with said theories. These conceptions are subject to – among other things – attentional biases, and what gets presented is always more salient than what does not.

In sum, then, this thesis aspires to provide a novel angle from which considerations involved in assessing theories of meaning may be approached, and to explore methods of systematically extracting and developing details relevant for assessing different theories of meaning from the resulting models. The chosen angle involves mapping the range of conceptions prompted by designated sets of key texts (relative to factors characteristic of the accounted for demographics such as cohorts of post-graduates compared to their professors in specific academic fields). This cognitive approach to the structure of theories of foundational semantics treats cognition as subject to embodiment-related factors like prototype effects and compression to human scale for purposes of mental modelling. Based on the structure of such models, one may then systematically specify a theory's requirements on the entity instantiating the forms of meaning the theory posits and the scope of the domains relative to which meaning-defining influences get aggregated. Ideally, paying conscious attention to such details will help further develop theories accordingly.

1.2 Overall Structure

The thesis proceeds in three phases. The notion of attributed situations on which the model is founded is detailed first, including the related notion of observers which links their identity to the sources of information accessible to them. This first phase mainly provides the structure of the schema to be applied and details the sense in which a text may materially embody a specific perspective even when distinct cognising agents are required to independently implement it. In the second phase, the

schema provided by this notion of attributed situations is then mapped onto theories of meaning as a framing device. This treatment focuses on the means to identify how theories' contents would be typically conceived by members of specified demographics given the conception-influencing factors they share because these analyses are intended to avoid abstracting away potentially significant differences at the outset.[12] Focusing on the material conditions in this manner also highlights the effects and limits of the forms in which people may relate to a theory of meaning and on which the theory's role as part of human conduct is thus based. The resulting structuring of this content also helps model it in a manner which highlights influence-defining relations' role and the resulting coverage. Based on these factors, the remainder of the thesis focuses on methods of extracting details embodied in such models. Such details include theory-internal identity conditions for meaning-instantiating entities and the extents of the domains within which influences certified by the theory are accounted for based on how the theory is presented.

1.2.1 The Model of Attributed Situations

While the model of how the contents of theories of meaning become conceived could strictly speaking be presented independently of the preceding notion of attributed situations on which it is based, this background is provided to clarify the approach being taken. Theories of meaning are not being treated as forms of attributed situations as such, but a lack of a relatively grounded characterisation of what the schema being applied to them involves would make the framing appear arbitrary. Starting with a discussion of attributed situations allows the schema to instead be associated with a sense of situatedness, which does apply to theories of meaning: they are focused on mapping the relationship between something manifestly present in the world – the various forms of signifiers – and the conditions which

[12] In defining demographics and specifying the sets of influences typical of them, one may still err on the side of too much abstraction, resulting in models which fail to capture some factors of interest. However, correcting for such issues is a matter of adjustment. In contrast, modelling the contents of theories in a manner not sensitive to such possible influences, mainly by designating a specific version conceived from an institutionally privileged (possibly justifiably so) position as the proper representation of their contents, provides no grounds or guidelines for such adjustments.

give rise to these entities' experienced meaningfulness. Some details such as the presence and role of observers in determining the selection of registered relations are more prominent in the case of attributed situations as well. Establishing the role observers, for instance, in this relatively more neutral context grounds the transition to examining their role in the case of theories of meaning.

The basic framework for representing situations applied here uses set-theoretic notation adapted from situation semantics (e.g. Barwise and Perry, 1999) to list the constituents of said situations. This use of formal models which carries over when the schema is applied to theories of meaning is intended to be maximally unambiguous about the relations involved despite its relative opacity. Such models also provide a template for indexing the elements identified as part of the proposed forms of analyses. Given how they track the structural relations between such elements, the results can be graphed based on the template. The discussion of attributed situations first considers how situations can be treated as simply designated sets of entities. However, it appears that there are distinct means to specify which entities a given situation being invoked would incorporate. For instance, a mention of 'the situation in London' would be constituted by location-based anchoring. If one then presumes that expressions such as 'your situation' or 'the situation of the EU' designate conditions which are inclusive of the circumstances that ground whichever judgement is being applied (e.g. 'Your situation right now is pretty bad.'), the question becomes how the involved constituents would be specified. The proposed model states that any such constituents must relate to the designated entity to which the situation is being attributed in a manner accessible to a specified observer. This model which is discussed in more detail in chapter 2 therefore includes (1) the core entity to which the situation is attributed, (2) the relations used to specify constituents, and (3) the observer whose perspective determines which relations qualify.

Additionally, chapter 2 postulates that the schema it presents can in principle be applied to attribute a situation to any entity which qualifies as a potential constituent of such a situation – including relations and arbitrary states of affairs. The sig-

nificance of this claim lies in expanding the applicability of the notion. It is required that one can conceive of meaning-instantiating entities as situated in approximately in this manner as part of adapting the schema as a framing device for theories of meaning later. One ought to also be able to conceive the possibility that the entities thus situated correspond to no well-defined, familiar entities. As some reactions to the proposed model consist at heart of the claim that the person in question finds it hard if not impossible to conceive of such possibilities, the notion of *imaginative resistance* (e.g. Szabó Gendler, 2000) and associated explanations are used at the end of chapter 2 to address the potential reasons for such limitations. In effect, as inconceivability has traditionally been considered a sign of self-contradiction, the possible involvement of other forms of imaginative resistance is used to respond to the criticism that applications of the model itself are somehow inconceivable. Access to alternative explanations bars inferring that trouble conceiving the involved forms of situations must entail the model being incoherent. Ideally, the provided considerations will also help overcome such issues moving forward.

The observers integrated into the model of attributed situations presented earlier are then discussed in more detail in chapter 3. The purpose of this in-depth model of them is to specify in what sense conceptions across individuals can incorporate perspectives attributable to the texts on which their conceptions are based. Specifically, the model is intended to provide a material basis for this treatment of the structure of theories of meaning down the line. The basic model consists of pathways of (information) access which are characterised as structurally founded successive points sensitive to select immediate conditions, and layers of integrative formatting where the information from associated channels of access is parsed.[13] While the purpose of access is to specify the limits of any given observer's perspective and to

[13] Such pathways include both external and internal media such as the trajectories of light and sound alongside neural connections. Layers of integration include both neural sub-systems responsible for parsing such information and external instruments such as computer monitors which depict the internal state of the machine in a manner suited for further processing by the average user. As Giere (2006, p. 41) notes, 'scientific instruments are perspectival in that they respond to only a limited range of aspects in their environment'. The layered model in part accounts for such contributions of external instruments, scientific and otherwise.

ground the model in basic causal interactions, the focus for purposes of this thesis lies on the role of the layered systems of integration. Most importantly, the layered system allows for sub-layers of a total system to be treated as (partial) observers, even when such systems may only operate as observers when incorporated with further layers of integration. Thus, one can analyse the perspectives embodied in individual texts and sets of texts with a common subject as such partial systems which are incorporated into the total perspectives of individuals studying the material. Even though realising the perspectives embodied in texts requires them being implemented within a larger system, this model allows the nature of such perspectives to be understood and therefore addressed instead of them being treated as merely a convenient abstraction. The chapter divides the resulting kinds of observers into positioned basic observers (e.g. human beings), positioned constructed observers (e.g. first-person narrators), and detached constructed observers (e.g. the camera in film).[14] These categories are used to structure the roles involved in theories of meaning: the conceiving person, the idealised processor of meaning, and the perspective from which the material is presented.

Besides the mentioned instrumental reasons for the inclusion of the discussion on attributed situations, this analysis ought to also possess some value independently of its role relative to the rest of the thesis. Ideally, the presented notion of attributed situations and formal model thereof can also be applied to frame issues other than the structure of theories of meaning because acknowledging the situatedness of the objects of research helps accommodate the presence of the widest range of (potential) factors.[15] For instance, moral particularists (e.g. Dancy, 2004) may

[14] Detached basic observers – observers of actuality which are (selectively) exempt from the rules to which entities are subject as part of that reality – play no role in the discussion, and the category may well consist of an empty set without inviting any issue with the provided taxonomy.

[15] Consider how the explicitly situated entity is being related to each potentially pertinent factor in its particular environment. Only when the presence of those factors is recognised can their effects be controlled for in recording the results. Whenever such particular conditions are abstracted away, one risks some recurring condition biasing the supposed relation between studied phenomena. As Keller (1995, p. 163) summarises Barbara McClintock's attitude towards science, exemplified in her research on maize development which helped identify the presence of genetic transposition (i.e. systematic reordering of parts of the genome): '"Exceptions" are not there to

benefit from access to such models of situatedness which they can adapt to depict the sources of the considerations which apply to a given ethical dilemma and the differences in circumstances which change how such instances are judged. Similarly, the presented model of observers may help focus attention on the aspects of the process of observation which it highlights despite how this technical definition is not intended to capture some singular, true essence behind the everyday notion of observers. For instance, framing the system responsible as involving structural ambiguity in terms of the possible activation conditions of any of its parts – including 'internal' forms of information transmission – allows approaching hallucinations and other forms of non-veridical experiences as a matter of insufficient first-personal differentiation. The internal states associated with external conditions at the level of evolutionary precedent are misconstrued based on expectations embodied by the system. However, this perspective also then leads to potentially interesting further questions about the exact nature of the means by which such ambiguities are habitually resolved and the role of awareness of one's fallibility in changing those expectations, often based on accounting for third party testimonies. Potentially seeding such possible avenues of further research by doing so makes discussing the model in detail worth the effort.

1.2.2 Idealised Models of Conceived Content

In the middle lies the section on reconstructing and representing models of how the contents of theories of meaning become conceived based on texts expressing said theories. The objective is to relate to theories as worldly entities rather than abstract sets of principles. Specifically, the section utilises the introduced schema for attributed situations as a framing device around which the contents of such theories can be structured, given certain generic features shared specifically by theories of mean-

"prove the rule"; they have meaning in and of themselves.' Deciding in advance which factors a model accommodates *defines* any other less than fully understood influences as such supposed exceptions, whereas acknowledging their presence through modelled situations at least allows controlling for them in hindsight. Another example would be Principe's (2013, pp. 138–143, 158–166) successful recreations of supposedly impossible alchemical recipes by controlling for impurities in the components and quality of implements. For instance, iron dissolved from non-stainless steel explains the alleged redness of vinegar-based extracts from glass of antimony (heated antimony with traces of quartz).

ing.[16] This schema is not treated as *uniquely* suited for the task: the same content can be structured using different frameworks depending on which aspects of it are focal to the purpose of one's analysis. Parallels with attributed situations specifically help focus on two key details: the relationship between the central, meaning-instantiating entity and its surroundings, and limitations on scope linked to the constraints of human cognition. Means to extract such details based on these models are presented in the last two chapters. Highlighting these details helps dissociate theories of meaning from mere descriptions of a (hypothetical) reality. Instead, texts expressing them provide schematic models which possess internal conditions and material limitations. Unlike descriptions, such models are not subject to evaluations of truth and falsity as such but to questions of fit: 'Schemata are not generally described as being true or false, but as fitting the world in limited respects or degrees, and for various purposes.' (Giere, 1988, p. 6). Veridicality instead applies to claims derived from such schemata. Models of the proposed kind contribute to this form of understanding by accounting for the selection of involved particulars and relations between functional categories.

Under this framework, theories of meaning are approached as the range of mentally modelled conceptions which a designated corpus of key texts affords as interpretations of what it describes under specified sets of influences. These possible ways to conceive the contents of a theory are restricted, both in principle and in practice. In principle, (the grounds for applying) some schematic structures will recur across conceptions because of the invariant material on which such conceptions are based and the nature of said texts as expressions of explanatory models of how cer-

[16] Such generic features include (1) the presence of a type of entity treated as meaningful based on a set of contributing factors, (2) a selection of relations (including of parts of the entity to itself) treated as definitive of the meanings of applicable types of entities, and (3) a perspective relative to which such considerations are presented. The perspective is considered inclusive of both the position of an idealised processor of meaning to account for how the posited form of meaning relates to how people experience meaning and the overall perspective relative to which everything is presented. Of these, only the presence of a perspective should be potentially controversial. Though, its inclusion ought to be treated as a banal feature of the form of naturalist analysis being conducted: 'The inescapable, even if banal, fact is that scientific instruments and theories are human creations. We simply cannot transcend our human perspective, however much we may aspire to a God's-eye view of the universe.' (Giere, 2006, p. 15). Each text of any kind embodies a perspective peculiar to it insofar as it may only express or depict a limited set of considerations.

tain entities come to hold meaning or be experienced as meaningful. The latter in-principle reason includes the basic structure the frame derived from the notion of attributed situations provides. This structure is inclusive of the representation of the type to which meaning is being attributed, the set of relation types treated as definitive of the meanings of such entities, and the presence of a position relative to which this arrangement is presented. Meanwhile, practical restrictions on the range of potential conceptions come from the range of actual applicable influences. That these practical restrictions apply counters the argument that this form of relativism allows for absurd, clearly wrong-headed conceptions to be treated as representative of the contents of a theory. Unless the conditions under which such an absurd conception would be arrived at based on the designated corpus can be specified, the possibility has not been proven. If these conditions can be specified, the results are no longer absurd – only highly unlikely and with respect to said conception, probably irrelevant for most purposes. The models do not touch on the matter of whether a possible conception is wrong as such an assessment would require settling on some conception as a correct understanding to use as a measure of correctness. Even if an author's intended version, for instance, were treated as authoritative in this respect, their works cannot be guaranteed to represent said intentions satisfactorily. The current approach is only concerned with what said public representations of the theory ground as they act as the source of the conceptions with which people operate in relation to a given theory.[17]

The models are derived by designating a set of texts and testing if the members of some demographic of interest gravitate towards specific representations of the scenario these texts present. If a pattern of clustering in terms of their individual conceptions emerges, it can be assumed said demographic shares a set of influences typical of them, and that these influences meaningfully affect their conceptions. The

[17] Thus, discussions such as Mele and Livingstone's (1992) arguments for the primacy of authorial intentions do not directly touch upon the issue at hand. Their argument can be treated as a normative recommendation for basing certain judgements about texts on evidence about underlying intentions. This position remains compatible with the form of each text embodying a range of interpretations which it affords under specific circumstances.

hypothetical eye of such clustering – its centre of gravity, in a sense – is treated as what Sperber (1996) calls an *attractor*, as part of his theory of cultural epidemiology. Such attractors are abstract statistical constructs which express that 'in a given space of possibilities, transformation probabilities [...] tend to be biased so as to favour transformations in the direction of some specific point, and therefore cluster at and around that point.' (Ibid. p. 112). The transformations in question involve the potential changes in the forms in which conceptions emerge and change when constructed, recalled, and so on. If such a pattern emerges, the factors typical of that demographic which would explain the results need to be identified – including typical socioeconomic trajectories and the other theories and related material to which they would have been subjected as part of their education. Once a satisfactory collection of such influences which would explain the observed pattern has been identified, how the theory would be conceived under their (and as much as possible, only their) influence can be reconstructed to represent an idealised conception typical of the members of said demographic.[18] This approach is intended to accommodate and record potential variation in resulting conceptions based on cognitive differences. Should *no* meaningful variation be found, it would in itself be a consequential result.

1.2.3 Methodological Suggestions

The last two chapters then detail how the perspective provided by framing theories of meaning using the above schema can be used to identify (1) theory-internal identity conditions for instantiators of meaning and (2) the extent of various forms of involved scope, respectively. Building on what has come before, these proposals act as a proof of the value of said considerations. The proposed methods provide a means to understand and assess theories of meaning from a new angle, but applying

[18] Thus, while the approach is interested in approximating internal conceptions, the models are only derived from such conceptions instead of attempting to directly capture any given one. Giere (2006, p. 105) expresses scepticism towards the possibility of satisfactorily capturing how theories are understood based on internal models. His reasons include the variation between individuals and the unlikeliness that even experts possess complete internal models of complex theories. The focus on reconstructing a typical conception addresses the former worry. The latter worry need not factor in since such models do not represent what people retain. Instead, these models reconstruct what forms of conceptions a given set of texts would engender under set influences.

them involves recognising the forms of selectiveness emphasised by the model of observers and other limitations of the human cognitive apparatus. These details are not treated as explicit parts of how theories of meaning are conceived. They are considered a structural feature partly obscured by the features of how people conceive content by default. As such, these methods ought to be considered means to *develop* such conceptions in the light of the provided perspective, and formulae for creating secondary material which highlights such details.

Starting with the identification of the instantiators of meaning, the hypothesis being presented is that a theory's total form may impose further conditions on the required entities beyond what an intuitive understanding would entail. For instance, 'utterance' is manifestly used to designate whichever form of language-betokening entity such as a verbal statement or text message. The inclusion of some such entity is surely *necessary* for meaning according to contextualist theories of utterance meaning (e.g. Sperber & Wilson, 1995; Recanati, 2004). However, it remains an open question whether such entities may by themselves *suffice* as receptacles for the kinds of meanings attributed to them based on the principles such theories propose. According to these theories, the utterance is never meaningful independently of its context, after all.[19] Therefore, the minimal meaningful entity would include the manifest utterance and at least some contextual prerequisites. Similarly, a literalist theory which ascribes meaning to 'words' in themselves (e.g. Cappelen & Lepore, 2004; Borg, 2004; 2012) imposes conditions on the possible material identities of these types.[20] Given the potential for theory-internal demands to necessitate variation in the material identities of applicable instantiators, the proposed methods act as a means to ensure a systematically grounded understanding of such details over reliance on intuitive

[19] 'Contextualism ascribes to modulation a form of necessity which makes it ineliminable. *Without contextual modulation, no proposition could be expressed* – that is the gist of Contextualism. In this framework the notion of a 'minimal' proposition collapses: there *is* no proposition that is expressed in a purely 'bottom-up' manner.' (Recanati, 2005, p. 180, emphasis in original).

[20] Word identity, specifically, has been discussed independently (e.g. Kaplan, 1990; 2011; Gendler Szabó, 1999; Wetzel, 2009; Hawthorne & Lepore, 2011). Approaches to their material identity can roughly be divided between defining criterion-based type-token distinctions (e.g. Wetzel, 2009) and materially extended stage-continuant models (e.g. Kaplan, 1990; 2011) based on causal chains.

approximations.[21] The purpose is to help form clear(er) and (more) distinct impressions of the involved entities for assessing the feasibility of theories.

The method for identifying the conditions for full instantiator identity and the available material realisers of such identities starts with specifying what the theory considers the basic-most form of some entity qualifying as fully meaningful. This form of closure condition to help specify the simplest applicable entity is based on theory-internal criteria to avoid generalising a single theory's assumptions as a guideline by which the rest are assessed. At the same time, however, the minimalist nature of the criterion helps assess the results in terms of their parsimony: whether the same results can be achieved with fewer requirements. The set of relations treated as definitive of such basic meaning is then made the subject of analysis. The identities of applicable entities are seeded based on the manifest identities associated with whichever terms the author uses for the kinds of instantiators they are discussing such as 'word'. To respect the author's choice of terminology, the inclusion of some uncontroversial basic identity like this is treated as necessary but not sufficient until proven otherwise. When the requirements of occupying the designated position – mostly that of a recipient of associated semantic effects – in each of the relations definitive of basic meaning according to a theory have been specified, the results can be compared to this baseline. If the associated entity is not fit as a participant in such relations, one may specify which material extension available in the relevant kinds of situations would allow for said requirements to be met. The resulting type of entity

[21] As Hawthorne and Lepore (2011, p. 482) allege, the majority of authors presume the sufficiency of such *sloppy realism* according to which 'the unsettled questions turn out to rest on borderline cases and are to be handled using the correct theory of vagueness'. The authors themselves claim (Ibid. p. 482) that '[t]hose who pursue questions of word individuation and hope for systematic answers are almost invariably in the grip of a faulty picture of the semantic mechanisms that underlies thought and talk of words.' (In context, it is unclear whether the authors subscribe to this claim since it only applies under a pessimistic view they are addressing. Kaplan (2011, p. 528) clearly interprets Hawthorne and Lepore to share said pessimism, though.) Assuming that the criticism concerns attempts to define some *true* essence of entities such as words, though, their position is not antithetical to the current project. The analysis of theory-internal identity conditions for the instantiators of the kinds of meaning being posited only concerns the theories themselves even if the resulting data can perhaps be used to define distinct pragmatically relevant categories of meaningful entities like utterances-in-context.

is then treated as the minimal full instantiator a theory allows, given the principles it espouses. For instance, if a theory treats true homonyms[22] as distinct words rather than as the same word possessing unrelated senses, the sense in which 'word' is being used requires some further condition to materially differentiate instances of the distinct ones associated with a singular expression. Depending on how interpreters are assumed to differentiate between instances of such words, for example, one may then extend such enriched identity to be inclusive of associated (functional) neural states or whichever other available entities fit theory-specific criteria.

Scope, on the other hand, is an expression of the extent of the domains within which a theory applies its set of influence-defining relations. If said relations were compatible with multiple entities, scope would define which register and are accounted for to achieve the proposed meanings. The contrast between Russellian definite descriptions (e.g. Russell, 1905) and Austinian situation-based semantics (e.g. Austin, 1950; Barwise & Etchemendy, 1987; Barwise & Perry, 1999) provides an obvious example of applied domains defining the resulting meaning.[23] The inclusion of both a temporal and a modal axis allows for even more differentiation. As the existence of temporal externalism (Jackman, 1999; 2005) proves, for instance, accounting for the future is *possible* despite most theories opting not to extend their temporal scope in said direction as it risks either the resulting meanings becoming unknowable at any given point in time or at least constantly open to revision. Such scope is being treated as having three aspects: (1) which *dimensions* it covers (spatial, temporal, and modal), (2) which *directions* on those dimensions register, and (3) to what *extent* does the domain spread in said directions.

[22] In the case of a true homonym, both the pronunciation and spelling used to express the involved concepts are identical. A popular example is 'bank', most commonly meaning either the edge of a body of water or a financial loaning, investing, and bookkeeping institution.

[23] The ideal of Russellian semantics would be utilising worlds as the relevant domains in order to achieve unilateral referents for expressions. Within Austinian semantics, formally similar principles are applied relative to implicit situations specific to each statement (Barwise & Etchemendy, 1987, pp. 26–30). As a result, a description such as 'the biggest dog' would define variable referents for an Austinian depending on which situation (including the world-encompassing scope) is being applied where as a Russellian would require (implicit) further qualifiers for a dog other than the *very* largest canine to be designated by the description.

For each theory of meaning, at least three associated kinds of scope can be defined relative to such factors. The type most directly linked to the material limitations involved with the media in which theories are expressed is *implemented scope*. It expresses the extent of the considerations actually presented for purposes of conceiving a theory's content and embodied in the resulting conceptions. Specifying what a theory actually presents can be contrasted with what it alleges to cover as well as the range of considerations it excludes. Meanwhile, *potential scope* consists of the limits of what the principles a theory provides can provide without undermining the predictions the theory makes. Finally, *ideal scope* is specified relative to the task of a given theory (e.g. defining truth conditions). It specifies which dimensions and directions ought to be accounted for by a theory attempting said task and to what extent. Each kind involves distinct methods of extraction. Implemented scope effectively corresponds to the extent of the considerations accounted for from the perspective of the constructed observer which corresponds to a total view of the scenario depicting how a theory is presented. Potential scope is derived by considering cases beyond implemented scope and which kinds of entities may act as influences given the principles a theory posits. Determining ideal scope involves general considerations such as how rigid the results ought to be, with greater rigidity requiring more inclusive scope.

1.3 Theoretical Framework

Much of the current work applies whichever notions help structure or ground the issues highly opportunistically whenever prior discussion of a specific issue has not been available. However, many of the claims being made involve specific theoretical scaffolding which differs from premises in how one need not accept the metaphysical and scientific positions which constitute such scaffolding in order to apply the proposed approach. These positions play a non-essential, instrumental role enabling the perspective being applied to be reached.[24] Said theoretical framework consists of three main parts. The first part is a form of materially based ontological pluralism

[24] This resembles how Wittgenstein (1921, §6.54) treats *Tractatus* as a ladder to be discarded.

which posits that it is in principle possible to carve the world in an infinite number of ways which only differ in terms of their value relative to their task-specific applicability instead of any among those which fit *uniquely* corresponding to the underlying base structure. The second part of this scaffolding is the epistemological position that claims to objectivity are unprovable, resulting in a need for critical analyses to establish the sense in which objectivity is being approached and the degree to which it is achieved. The third position – an embodiment-based approach to cognition – is less philosophically oriented. It acts to provide a framework for characterising the (likely) involved cognitive processes. Basically, the way experience gets structured is treated as contingent and the exact details as subject to material dynamics involving the active interaction of both physiological and environmental factors.

1.3.1 Promiscuous Realism

Promiscuous realism (Dupré, 1993) is adopted as a guiding principle to minimise the strong ontological commitments associated with more substantial forms of realism. This position remains agnostic on which explanatory frameworks among the alternatives might be superior to others, leaving room for the *possibility* of unconventional entities such as extended instantiators of meaning being treated as explanatorily important. Promiscuous realism consists of radical ontological pluralism, according to which 'there are countless legitimate, objectively grounded ways of classifying objects in the world […] [which] may often cross-classify one another in indefinitely complex ways.' (Ibid. p. 18). Legitimising countless classification schemes in this manner neither legitimises all the *possible* schemes nor makes each equivalent. The position remains a form of realism, and thus, appropriate schemes must still be mappable to how reality presents itself.[25] For current purposes, such grounding is associated with physical reality in a naturalist sense: one ought to be able to identify

[25] 'Before admitting something as real, one has to say what it is an invariant across. And one doesn't rely on relations to alternative realities to give structure to the world or on intrinsically meaningful entities.' (Barwise & Perry, 1995 p. xli). Here, Barwise and Perry are discussing how Dupré's promiscuous realism which also undergirds situation semantics does not constitute a form of Meinongianism.

the substrate involved and causal processes responsible under *some* observatory framework instead of appealing to entities and processes in the abstract.[26] This commitment motivates the approach being taken to characterise theories of meaning based on the ways in which they become conceived in relation to available texts, and it is partly responsible for the preference to treat cognition as embodied.

Though, as Dupré (1993, pp. 34–36) observes, classifications serve various interests (e.g. profitability, intrigue, appeal). Classifications may be ranked relative to such interests, giving them different (practical) legitimacy. Criteria for sameness cannot be established without attending to aspects of entities selectively, and interest-laden values determine which aspects are worthwhile in a given context.[27,28] For instance, one may construct a category inclusive only of dogs and cats. Call it 'urpets', consisting of predatory mammals domesticated prior to the Iron Age. This neologism would distinguish between sub-types of domesticated species in a manner that highlights people's historic relationship to dogs and cats. The category of 'urpets' not being based on genetic features does not make it less real than taxonomies which focus on such aspects of organisms. Different classification schemes may coexist as equally valid means of identifying patterns *present* in reality even when some are situationally more useful, making them preferable in the associated contexts. In

[26] 'Minimally, naturalism implies the rejection of appeals to anything supernatural.' (Giere, 2006, p. 11). Giere treats his naturalism as a 'methodological stance' in much the same way this work considers the presented theoretical baseline a form of scaffolding: it is a way of relating to the phenomena under discussion in hopes of achieving a results that prove the attitude helpful instead of the approach needing to be justified *a priori* (Ibid. p. 12).

[27] '[T]here is no conception of species that supports the idea that there is any privileged sameness relation demarcating the members of a species. Thus the criteria chosen in practice to distinguish the members of a species are likely to be chosen in part for anthropocentric reasons such as ease of human application.' (Dupré, 1993, p. 36). For a stronger formulation of the reliance on interests, consider the following quote (Ibid. pp. 51–52): 'The point [...] is to make clearer what should be the grounds for accepting a taxonomic scheme: not that it is the right one, since there is none such; but that it serves some significant purpose better than the available alternatives.'

[28] For instance, while genotypical criteria such as phylogenetic differentiation have mostly superseded phenotypical criteria such as morphological similarity in the biological sciences, there seem to be conflicting reasons to prefer different classifications in different contexts. By phylogenetic standards, dogs and wolves, for instance, remain part of the same species since interbreeding results in fertile hybrids (Gray, 1954). Yet, distinguishing between the two based on morphological and behavioural criteria undoubtedly holds value in canine ethology, for instance.

terms of the material identity of 'words', for instance, the entities presented by Kaplan's (1990; 2011) stage-continuant model[29] of word identity may be accepted as one referent for 'word' while more intuitive referents would remain distinct senses with different domains of application. The shared expression is mostly irrelevant.

Within this framework, all categorisations being applied – for instance, situations being inclusive of objects, properties, and so forth – are treated as a form of shallow metaphysics of human cognition without any commitment to their more fundamental reality.[30] Under promiscuous realism, the only pre-conditions for such a taxonomy – including typifying heretofore unrecognised constellations of complex states of affairs – are the posited entities being grounded to a degree and them being humanly conceivable.[31] Some taxonomies may be more readily compatible with organising principles of experiences such as continuity or closure but this makes harder to conceive (but not inconceivable) entities no less *acceptable*.

1.3.2 Perspectival Fallibilism

The term 'perspectival fallibilism' is intended to convey the notion that judgements on the objectivity of different perspectives are necessarily fallible. Taking cues from feminist epistemology (e.g. Bordo, 1987; Longino, 1990; Keller, 1995), this position stands in opposition to epistemic objectivism (e.g. Nagel, 1986) with regard to the

[29] According to the stage-continuant model, each individual word corresponds to a temporally extended, often branching continuity of expressions intended to refer in a particular manner regardless of the forms utterances expressing stages of this continuum take. Thus, the word for referring to domesticated felines in a relatively neutral manner would accommodate various media and variants such as 'cat', 'cate', or 'catto', each of which is present in current online vernacular.

[30] In other words, that discussion is *not* about what is real, only what is conceivable. This distinction between shallow and fundamental metaphysics is inherited from Fine (1982; 2001) and it differentiates the role of analysing the ontologies present in systems of structuring reality (e.g. language, cognition) from arguments on the fundamental nature of reality as such. The distinction is not explicit in Fine's writing but Moltmann (2014) identifies in his work on non-existent objects and his conceptualisation of realism links to his lectures on shallow and fundamental metaphysics.

[31] 'One of the assumptions of situation semantics is that human cognitive abilities make naturalization routine; […] anything humans systematically use is an invariant across situations so that they can step back and objectify it, and so treat it as a thing in its own right. […] Thus, in situation theory, anything we use can be objectified and talked about. This applies to situations themselves, to relations, operations, conditions, parameters – whatever' (Barwise, 1988, pp. 179–180).

possibility of an ideally objective standpoint being recognisable as such in a non-circular manner. The ideal of objectivity itself remains worthwhile but success in attaining it cannot at any point be treated as *given*. In the spirit of epistemic fallibilism (e.g. Peirce, 1955; Popper, 2002a; 2002b), evaluations of whether an ideal epistemic position has been attained are treated as always being subject to having been made from a standpoint which would itself need to be proven objective. Attempting to objectively certify any such perspective as purely objective may only lead to either an infinite regress in search of such guarantees or circular justification. The adopted position instead embraces how a degree of uncertainty about its impartiality always accompanies any given perspective relative to its specific applications. Objectivity is being treated not only as scalar but also as multi-faceted: it cannot universally be reduced to singular factors such as impersonality. As Daston and Galison (2007) demonstrate, there exist mutually exclusive historical conceptions of objectivity (e.g. discerning judgement versus mechanical processing) with different benefits.

Because of the prevailing discourse on the nature of objectivity tending to privilege the notion of objectivity as detachment – so-called aperspectival objectivity[32] – as *true* objectivity, applying perspectival fallibilism creates a contrast with such objectivist attitudes. According to that position, objectivity ought to be identified with an idealised perspective entirely purified of subjective or position-based considerations – a *God's eye point of view* (Putnam, 1981) or *view from nowhere* (Nagel, 1986). The ideal of impartiality this conception embodies is not questioned here. Only the unique privileging of said ideal as the essence of objectivity and the associated, exclusionary methodological approach are being contested. For instance, as Bordo (1987) and Keller (1995) show, the dichotomies on which the justification for this position is founded (e.g. pure intellect versus impure material existence) can be traced to the psychological effects of perpetuated socio-historical factors, potentially up

[32] The term 'aperspectival objectivity' is adopted from Daston (1992, p. 599) who characterises this ideal by quoting Nagel's (1986, p. 5) definition of objectivity: 'A view or form of thought is more objective than another if it relies less on the specifics of the individual's makeup and position in the world, or on the character of the particular type of creature he is'.

to and including models of gender hierarchy.[33] Such commentary may not disprove the opposed position but it does nevertheless reveal ways in which the ideal and its associated values are themselves foundationally related to historical contingencies instead of being the products of the advocated form of 'pure' deliberation. These forms of considerations ought to at least give one pause and invite further reflection. Within this thesis, the main criticism of claims to aperspectival objectivity concerns the available objects of such inquiry. Whenever one assumes a position distanced from one's actual perspective on the world – a precondition for aperspectivity – it occurs in relation to a *reconstruction* (whether modelled mentally or computationally). Since the reconstruction must exceed one's own, positioned perspective for purposes of greater generality, one always lacks the means to reliably represent reality with this extension. Its contents are extrapolated from *perspectivally* available information rather than based directly on the actual states of affairs being modelled.

That detached depictions depend on reconstructions due to the involved physical limitations motivates the analysis of constructed observers, including those relative to which the contents of a theory are presented. Such models are inherently restricted in the scope of what they may accommodate. This detail calls to attention the scope being implemented, especially whenever a theory alleges to apply in an absolute sense, accounting for every state of affairs, since the version of the world from which justification is derived may never actually be inclusive of *all* the facts. The ideal itself need not being questioned. The criticism only pertains to worldly limitations being bracketed as inconvenient and unavoidable when the details still matter. The proposed means of relating to theories' content ought to in fact help push the

[33] Keller (1995, pp. 33–65, 103–112) stresses how scientific understanding is historically characterised as *mastery* – domination over nature – wherein the unaccountability of the experimenter towards their subject parallels the unilateral dynamics of paternal hierarchies. Most importantly, the particular (i.e. data) is treated as secondary to the general (i.e. theory): abstracting and discounting inconvenient data points as 'deviations' is legitimised despite each representing something *real*. Bordo (1987, pp. 60–73), on the other hand, points to the historical connection between perspectivity in the arts and the idealisation of unpositioned representations of visual reality. The contingency of this ideal is put in perspective by her analysis of medieval European art which depicts inherently visually unrealistic scenes that nevertheless represent other veridical relations such as the continuity between events (as opposed to separation into individual scenes).

limits by making the implemented boundaries evident and therefore defining the available directions of expansion. While fallibilism concedes that absolute certainty is impossible (Peirce, 1955, p. 59), epistemic ideals may regardless be approximated ever more closely with the help of continued critical scrutiny.

1.3.3 Embodied Cognition

In a sense, the acceptance of embodiment lies at the root of the theoretical framework: both the multiplicity of acceptable ontologies and the inaccessibility of a truly detached view on reality as such are in part motivated by this position.[34] In generic terms, theories of embodied cognition (e.g. Lakoff & Johnson, 1980; Clark, 1997; 2016; Varela et al, 2016; Damasio, 2018) claim that the features of the material reality which gives rise to cognition ought to be accounted for in explaining cognitive processes. Thus, the characteristic operations of different cognisers' cognitive processing are considered continuous with both their anatomy and the environments they inhabit. In contrast to how the brain is often conceived as a self-subsistent cognitive apparatus (i.e. capable of thinking by itself, given basic sustenance),[35] theories of embodied cognition would argue that a brain alone does not *suffice* for supporting cognition. Consider, for instance, the form of life enabled by the presence of smart-phones and the like – devices which allow largely non-spatially (in terms of user experience)

[34] Specifically, the current project relies on the branches of embodied cognition theory which Shapiro (2011) dubs (1) the conceptualisation hypothesis (e.g. Lakoff & Johnson, 1980; Sweetser, 1990; Varela et al, 2016) and (2) the constitution hypothesis (e.g. Clark, 1997; 2016; Damasio, 2018). These approaches to embodied cognition allege that '[t]he properties of an organism's body limit or constrain the concepts an organism can acquire' and that '[t]he body or world plays a constitutive rather than merely causal role in cognitive processing' (Shapiro, 2011, p. 4), respectively. The most radical version of embodied cognition, the replacement hypothesis (e.g. Van Gelder, 1995; 1998), which claims that '[a]n organism's body in interaction with its environment replaces the need for representational processes' (Shapiro, 2011, p. 4), plays no role in this work.

[35] This position is captured by Dennett's thought experiment in *Where am I?* (Dennett, 1981, Ch. 17). In this thought experiment, Dennett initially has his brain removed from his body and connected to it using long range communicators. When the signal is cut as his body is buried during an incident, Dennett is left as an unstimulated brain in a vat for a time before a new body is provided. Dennett assumes that his brain would continue supporting its usual modes of thinking even when deprived of both bodily and environmental modulation. An embodied approach, on the other hand, would involve at least asking what changes in cognition habituation to this novel environment would involve, assuming that such arrangements were able to sustain cognition at all.

mediated forms of interconnectivity through two-way interactions – in contrast to pre-modern life or even the era of the radio. That information technology appears to affect people's sense of space and time has been recognised and discussed for a while now (e.g. Graham, 1998). From the perspective of embodiment, this effect would be explained through the experiential link between proximity and associated details (immediacy, interactivity, clarity of audio-visual sensations) on the one hand and the device as an extension of one's capacity as a cognising actor on the other hand. The design of web interfaces together with the nigh-immediate presence of content in the device for browsing condenses the distance between scattered servers into a sensation reminiscent in these respects to sharing a space.

Especially in relation to embodiment, one must keep in mind that the theoretical framework under discussion is not intended as a set of premises but as scaffolding for the discussion. Because the thesis approaches its subject in relation to the effects of cognition, *some* frame of reference is needed for discussing these processes. Theories of embodied cognition have been selected to act as this frame of reference because these theories address rather than bracket the connections between cognition, ecology, and physiology.[36] Unlike alternatives such as the computational theory of mind (e.g. Fodor, 1975; 2008; Fodor & Pylyshyn, 2015),[37] embodiment allows *sourcing* the details of mental content, i.e. answering *why* a given concept would emerge in its specific form.[38] When this angle is applied to how theo-

[36] As Kuhn (2012, p. 18) notes, scientific theories *never* explain all the facts with which they are confronted: 'To be accepted as a paradigm, a theory must seem better than its competitors, but it need not, and in fact never does, explain all the facts which it can be confronted.' The details of the current theories of embodied cognition involve notable kinks, as Shapiro (2011) indicates. Yet, the aspiration to seriously accommodate the rich evolutionary history of cognisant organisms and their symbiotic relationships with their environments is undoubtedly worthwhile. Even if the effects were ultimately deemed limited, having observed them would enrich the total picture.

[37] In brief, the computational theory of mind is the view that 'cognitive processes are *computations*, which is to say that cognitive processes are operations defined over constituent structures of mental representation of the concepts and propositions that they apply to, which they may supplement, delete, or otherwise rearrange' (Fodor & Pylyshyn, 2015, p. 11, emphasis in original).

[38] For instance, Lakoff's (1987, pp. 339–343) main criticism of what he calls the 'mind-as-machine paradigm' constituted in part by the mind as an algorithmic processor is how such a position provides no grounds for a systemic account of *why* any given representation would have come to hold the value it does. In the case of computational theories, claims concerning the origins or

ries of meaning become conceived based on specified texts, it helps locate and explain potential differences in the conceptions of demographics with systematically different experiential frameworks that yield different cognitive models. For instance, factors such as the degree to which one operates with creoles can in principle determine whether one understands languages as relatively distinct systems of canonical lexicons and grammar or as more opportunistic, improvisational systems under active negotiation. Such differences can make the resulting pictures from engaging with a theory differently palatable to different people in part because they presumably construe the models differently and in part because of the mismatches between the structural relations between said hypothetical models and their sense of the real. Recognising any such differences allows addressing the relative merits of the variants.

However, the standing focus on embodiment does not necessarily preclude alternatives. The approach's concern with concept acquisition and the substrates which sustain cognition rather than the brute nature of the relevant processes also leaves room for computational processes as noted by both Clark (1997, pp. 220–221) and Shapiro (2011, pp. 205, 208–210). In principle, it ought to be possible to reconstruct the approach to modelling what is involved in people conceiving the contents of a theory of meaning being proposed under such alternative frameworks. Electing to treat cognition as embodied would thus be optional but doing so here helps highlight ecological effects on people's conceptions without adapting the alternatives.

While an in-depth understanding of the involved theories is not necessary for understanding their applications in the context of this thesis, the central theoretical apparatus being applied is introduced here, starting with the conceptualisation approach[39] and then touching on the constitution hypothesis. According to the con-

contents of representations belong in *supplemental* but associated theories such as radical concept nativism (Fodor, 1975; 1981, Ch. 10) according to which all (proto-)concepts are innate.

[39] Much of the work under discussion belongs in cognitive linguistics which risks begging the question despite how the thesis itself is intended to largely remain neutral towards the different theories of meaning to which the proposed methods can be applied. However, while the authors in question do attempt to reduce semantic phenomena to the cognitive apparatuses they propose, the claims about human cognition are not essentially theories of meaning. Even if these structures were integral to individuals' *understanding* of linguistic items, this would not need to entail them being

ceptualisation approach to embodiment which features prominently across this work, people's conceptual frameworks mirror their embodied existence as extended and oriented actors who experience both their internal states and external circumstances in idiosyncratic ways determined by their constitution. As a result, understanding tends to be based on *models* which reflect experience-based connections. Their contents include *frames* (Fillmore, 1976; 1982)[40] and *conceptual metaphors* (Lakoff & Johnson, 1980; Johnson, 1987; Lakoff, 1987)[41] which parallel experienced relations between manifest entities. In the case of frames, individual elements of familiar scenarios contextualise one another and substantiating the associated concepts requires invoking prototypical[42] representations of scenarios. Conceptual metaphors, on the other hand, involve parallels between multiple such domains wherein relationships familiar in one are used to structure the other. In general, more concrete, more directly experienced phenomena are applied in this manner to make sense of more abstract phenomena. According to Lakoff and Johnson (1980, pp. 56–58), the grounding of one such system over alternatives ultimately comes from what a certain form

definitive of the nature of meaning. After all, meanings need not be equated with such personal conceptions. It would remain coherent to accept cognitive linguists' claims concerning the nature of cognition without advocating the associated theories of meaning. One might, for instance, still define meaning without reference to individual psychology or by only accommodating a privileged subset such as 'the experts' (Putnam, 1975) who fit further criteria. While the risk of alienating proponents of other cognitively oriented linguistic approaches remains, the incompatibility of the proposed approach with these approaches' principles would need to be established independently. Embodiment remains *scaffolding* for framing cognition. The results are (largely) selfstanding.

[40] 'By the term "frame" I have in mind any system of concepts related in such a way that to understand any one of them you have to understand the whole structure in which it fits; when one of the things in such a structure is introduced into a text, or into a conversation, all of the others are automatically made available.' (Fillmore, 1982, p. 111). The notion of being a buyer, for instance, can only be understood relative to the frame of transactions which includes codefined concepts such as 'seller', 'trade', 'relative value', and so forth.

[41] 'The essence of metaphor is understanding and experiencing one kind of thing in terms of another.' (Lakoff & Johnson, 1980, p. 5, emphasis removed). Conceptual metaphors express this notion at the level of the conceptual system: notions in the target domain are defined (in part) by the conceptual structure superimposed from the source domain, and a given domain may be linked to multiple sources in this manner. As an example, consider how assessing abstract entities such as ideas relies on importing familiar experiences (e.g. taste) such as when an idea is 'unpalatable'.

[42] People need not have *distinct* prototypes in mind for such prototype effects where the degree of similarity with 'the clearest cases, best examples' (Rosch, 1975, p. 193) based on available experiences determines experienced fit with associated categories (Lakoff, 1987, pp. 43–45).

of embodied existence entails in terms of available orientations, experiences, and the like.[43] Because the environments of individuals factor in their experiences, the specific cultures which emerge in part based on the levels of emphasis granted to different available basic associations in distinct conditions also factor in the results in an inseparable manner. One example are the various ways in which 'common' is synonymous with or etymologically related to 'lowly' in English ('vulgar', 'banal', etc.).

Consider, for instance, the relations between the elements of 'a game': you have players, the roles of winner and loser, relatively distinct and largely sequential moves, abstract resources, and so forth, with some variations depending on the type of game being exemplified (e.g. team-based sports vs. boardgames). For the most part, the significance of such participating elements is co-defined with minimal reference to anything outside the corresponding frame they constitute together. A winner is whoever clears a game's internal victory condition, defining which is part of the role of the rules, and a loser is (generally) whoever is not a winner. While few situations are as self-contained as games, a degree of such interdependence is not rare, either (e.g. transactions, families, or organisation of biomes). In contrast to such self-containment which defines frames, conceptual metaphors connect otherwise distinct domains sharing experientially similar aspects by mapping partial frames and smaller associations between them from one domain to another. Thus, for instance, notions as they are expressed in the context of games such as what defines a winner appear to be used to structure people's understanding of economic actors rather frequently. This form of imposition of relations where one domain becomes characterised in terms of another constitutes a conceptual metaphor, and such connections tend to only focus on specific aspects at a time. Economies are not like games in many important respects, and while time can be treated as analogous to space in some respects, it is unlike space in others (e.g. directions of travel).

[43] 'Human spatial concepts, however, include **UP-DOWN, FRONT-BACK, IN-OUT, NEAR-FAR**, etc. It is these that are relevant to our continual everyday bodily functioning, and this gives them priority over other possible structurings of space – for us. In other words, the structure of our spatial concepts emerges from our constant spatial experience, that is, our interaction with the physical environment.' (Lakoff & Johnson, 1980, pp. 56–57)

These kinds of connections give rise to networks of internally structured and externally connected mental models which are generally known as *mental spaces* (Fauconnier, 1985; 1997). In a sense, a mental space constitutes a mentalised minimal context which gets constructed to track the identity of recognised entities and relations between them.[44] Some are semi-permanent while others only track situationally relevant relations such as the identities of mentioned entities. Mental spaces only represent the relation-based structures being expressed by various media (discourse, images, etc.) instead of needing to fully simulate such situations. However, visualising these cognitive constructs as either such simulated spaces or diagrams may assist the reader in approaching posited contents. Internally, mental spaces are structured based on available frames and other (idealised) cognitive models (e.g. individual prototypical representations of categories), while externally, they are linked by so-called *connectors* (Fauconnier, 1997, p. 39). A basic source of connectors is the *Identification (ID) Principle* (Nunberg, 1979, pp. 168–169; Fauconnier, 1985, pp. 3–5)[45] which can be used to, for instance, bridge identity between two descriptions of the same individual in different contexts. For instance, stating that Clark Kent is Superman connects the identity of one's representation of a certain journalist in one mental space with one's representation of a specific hero in another. Thenceforth, one would be able to infer that Superman works at Daily Planet based on the connection established between the relatively independent representations one has of the news scene in Metropolis and Justice League, respectively. Similarly, one might draw connections between one's representations of various fictional settings and the professional acting scene based on who plays which character in different adaptations. For current purposes, it suffices to consider mental spaces the interconnected representations of such distinct domains ranging from the situational to one's overall sense of what is real, individually constituted by lower order idealised cognitive models like frames.

[44] '[…] [M]eanings assigned to sentences in isolation […] are obtained in reality by building local, maximally simple contexts in which the sentences can operate' (Fauconnier, 1985, p. xxi).

[45] 'If two objects (in the most general sense), *a* and *b*, are linked by a pragmatic function F (*b* = F(*a*)), a description of *a*, d_a, may be used to identify its counterpart *b*.' (Fauconnier, 1985, p. 3, emphasis in original).

While basic mental spaces are derived straightforwardly from experience or descriptions, among them are *blended* spaces (Fauconnier & Turner, 2002)[46] which are generated when the connections *between* a set of mental spaces are integrated *inside* a novel space which incorporates aspects of the corresponding models.[47] Independently of individual combination principles, the overarching guideline is that blending occurs to enable applying relations internal to mental spaces to entities drawn from otherwise distinct contexts in a manner which compresses the total to be reducible to familiar cognitive models.[48] Thus, typical instances come to represent types and cosmological scales are reduced to relative distances between conceivably co-inhabiting entities of non-representative tiers of size (e.g. planets being large enough to remain identifiable relative to the sun and no planet being imagined as having more than thrice the diametre of the Earth).

To provide an example of the associated dynamics, consider the image known as 'The March of Progress': a line of great apes from left to right with gradually straightening posture and reduced hair, some of which to the right hold primitive tools. The image is intended to depict human evolution, and one can ask what details explain its success in this task according to the presented theories. The foundation appears to consist of various idealised cognitive models based on the metaphorical transfer of embodied qualities: line of sight correlating with direction, uprightness *and* upwardness with betterment, and so forth. As the image's title states, it depicts *progress*, and these details provide a basis for that through the forms of change they imply through gradual, unidirectional shifts. In contrast, everyone could have been kept sitting level with the rest to further emphasise greater continuity between them

[46] 'There is a fourth mental space, the blended space, that we will often call "the blend"' (Fauconnier & Turner, 2002, p. 41).

[47] 'In blending, structure from two input mental spaces is projected to a new space, the blend.' (Fauconnier & Turner, 2002, p. 47). While individual acts of blending only apply to dyads of mental spaces, complex blends can be achieved through a sequence of such simple blends.

[48] '[T]he governing principles are driven by one overarching goal: Achieve Human Scale. Human beings are evolved and culturally supported to deal with reality at human scale – that is, through direct action and perception inside familiar frames, typically involving few participants and direct intentionality.' (Fauconnier & Turner, 2002, p. 322)

instead.[49] Direction also matters since in the culture of origin, the future is depicted as *ahead,* unfolding before one's eyes ('foreseeable future').[50] These details define the relations within the mental space associated with the image itself – the connections between the discrete simians being depicted. For said image to be experienced as representing its intended subject – human evolution – though, the depicted relations must be blended with those present in one's understanding of people's evolutionary history.[51] At a conceptual level, one might understand said process to involve an indefinite number of gradually changing and continually branching generations. However, being able to conceive observable changes requires *compressing* this indistinct cascade of ant lines into a few clearly distinct, successive phases. The picture maps onto such an understanding by providing a specific expression for such a schematic understanding. Thus, while the conga line does not *inherently* represent the intergenerational succession involved in (human) evolution according to this explanation, it being designed to elicit such associations helps reliably engender this understanding given an audience informed on the basics of human evolution. The image and the audience taken together *afford* a relatively invariant core significance to be derived through the construction of corresponding mental spaces which share their basic structure due to mutual experiences specific to human bodies and contemporary physical and cultural environments.

The significance of the above to this work lies in the acceptance of human limitations engendered by material realities such as the limits of neural processing, the effects of ecological contingencies related to position, and reliance on prece-

[49] As a further example, consider how mainly conservative propaganda even shows the modern person hunching back over to represent their supposed degeneracy (bad posture from computers, 'regressing' to a pig from obesity). A more humanist or technocratic variation might instead continue the line by depicting technology as enabling one to soar off the ground or by having people stepping on a stairway of the books the author considers most definitive of humanity's progress.

[50] For contrast, consider Paul Klee's 1910 painting *Angelus Novus* which Benjamin (2005, Thesis IX) interprets as progress blowing the angel towards an unforeseen future as it faces towards the past.

[51] Please note that it is assumed the image itself is not already entrenched in said understanding. Its ubiquity as part of biology curriculums and pop science makes it almost inseparable from people's standing understanding of the subject, showing how culture moulds the environment within which later learning of associations occurs.

dent for models of reality. Many such details are themselves indubitable – such as that people can at most conceive infinity in the abstract given the finite resources available to them – which motivates taking their likely effects seriously, as this thesis attempts to do in relation to elaborating the understanding of people's relation to theories of meaning and the implications concerning the nature of the latter. The results of attempts to conceive the contents of a theory of meaning are treated as a mental space constructed using the provided prompts. The details of such spaces rely on the available cognitive material which is being considered inclusive of prototype effects, frames, and metaphorical transfer to emphasise the role of embodied factors and to have *some* framework as scaffolding. Since theories seek to describe the real to some extent, blending is involved at least in the act of attempting to meld what a theory posits with one's sense of the real.

The conceptualisation hypothesis discussed above is complemented by the constitution hypothesis according to which non-neural bodily and environmental structures are involved in the very realisation of cognitive processes (e.g. Clark, 1997; Damasio, 2018).[52] In the present context, this is largely a matter of framing instead of being treated as a substantial claim. Mere access to theoretical literature differs from neurally implemented memory traces of its content, for instance, yet treating the texts available to a person as an extension of their cognitive capacity can also help appreciate that relationship. The current project considers how a person may be attributed a certain understanding of a theory of meaning (or any other conceptual construct) even when they are only able to retrieve (parts of) it when actively engaged with the material rather than based solely on their neural states. Should this form of assisted recall consolidate into a relatively stable conception of what the theory entails whenever the person is prompted to reconstruct what the texts describe, the results can

[52] '[T]he basic form of individual reason (fast pattern completion in multiple neural systems) is common throughout nature, and […] where we human beings really score is in our amazing capacities to create and maintain a variety of special external structures (symbolic and socio-institutional). These external structures function so as to complement our individual cognitive profiles and to diffuse human reason across wider and wider social and physical networks whose collective computations exhibit their own special dynamics and properties.' (Clark, 1997, p. 179)

be of independent interest compared to what the person retains in absence of active access to the texts. The significance of such results lies in understanding the conceptions associated with interpreting the relevant set of texts based on one's existing cognitive architecture without accounting for the distortions invited by the fallibility of memory.[53] The results filtered through memory processes, on the other hand, are of interest in helping understand the effects of memory and resulting long term understanding. Recording the immediate conceptions even provides a baseline for tracking the changes involved in remembrance.

The above example of this dynamic demonstrates the sense in which an environmental factor relative to the individual may be granted a constitutive role in describing their cognitive state: in the absence of said factor, the results would be expected to differ. When an individual can intentionally reproduce this cognitive state by engaging with the material to which they have reliable access, the conditions enabling this extension of their cognitive arsenal are *functionally* little different from recall-enabling internal conditions. This form of interaction-reliant existence is best characterised through the Gibsonian notion of *affordances*.[54] Clark (1997, p. 172) defines affordances as follows: 'An affordance is an opportunity for use or interaction which some object or state of affairs presents to a certain kind of agent.' In other words, different objects (or other objectified entities) may be analysed in part in terms of the actionable qualities they may only actualise in the presence of suitable agents. As Sanders (1997, p. 97) notes, an affordance's reliance on both the features of the object and the agent makes treating affordances as the features of such combinations rather than either constituent of the dyad useful, as they can for instance be used to analyse emergent systems.[55] Specifically, affordances are specified based on

[53] For an overview of the various flaws of human memory such as suggestibility and bias, consider Schacter (2001). Many can be explained by treating recall itself as another form of guided reconstruction based on available cues and influences.

[54] 'The affordances of the environment are what it offers the animal, what it provides or furnishes, either for good or for ill.' (Gibson, 1979, p. 127). However, the sense in which the term is being used focuses on this co-reliant core dynamic and eschews reference to animals.

[55] 'Emergent phenomena, on this account, are thus any phenomena whose roots involve uncontrollable variables [...] and are thus the products of collective activity rather than of single components

the conditions for specific interactions to occur relative to the qualities of each involved entity, making them attributable to neither in isolation. For instance, for a stick or stone to be graspable, certain kinds of appendices or other capacity to envelop must also be present. However, in the context of this work, both how theories of meaning become conceived and the extraction of details concerning available instantiators and potential scope of theories are given an affordance-based treatment like this.

The constitution hypothesis, then, provides the thesis with a framework for characterising the aspect of theories of meaning towards which it directs attention: the systematic relations between specified sets of texts and sets of factors affecting the resulting conceptions, especially those typifying demographics of interest. The conceptions of interest need not be what a person *retains* overall. Instead, the total picture can be constructed in a manner inclusive of the features of both the texts and the conceiving individuals which define the resulting mental space constructs and only the features involved in active engagement. How such conceptions tend to be retained and reconsolidated provides a further avenue of inspection distinct from how what theories of meaning present directly becomes cognised and the refinement of such conceptions. Focusing on these active pairs of text and specified audience allows observing what is realised directly based on what the text presents. The results can then be exported and generalised by considering the contributions of the texts in question relative to the specific influences based on which the details of the resulting conceptions are satisfyingly explained. The results consist of descriptions of the affordances a text embodies in relation to specific influences which systematically affect the resulting conceptions.

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or dedicated control systems.' (Clark, 1997, p. 110). Variables in the intended sense are uncontrollable when they 'track behaviors or properties that arise from the interaction of multiple parameters and hence tend to resist direct and simple manipulation' (Ibid.). Thus, how theories of meaning are conceived would qualify as an emergent phenomenon since while the designated corpuses remain invariant for purposes of such analyses, while the sets of influences guiding the construction of the corresponding mental spaces provide the uncontrollable (but not entirely intractable) component relative to which the affordances associated with the texts can be analysed.

Chapter 02: Situated Entities

At the root of the current approach lies the notion of attributed situations – sets of circumstances defined relative to a designated central entity. The associated schema and formal model of it are later adapted as a framing device to represent aspects of the conceptual structure involved in conceiving the contents of theories of meaning. This chapter specifies the elements of the schematic model of such situations. Since the model is also intended to be generalised beyond the conventional cases and this development risks inviting trouble conceiving such situations, a part of the chapter is dedicated to addressing this issue with inability to conceive certain situations.

The general model of situations adapted from situation semantics treats situations as sets of (1) objects, (2) properties, (3) relations, (4) partial states of affairs, and (5) spatiotemporal coordinates. Different types of situations involve different selection principles for specifying such constituents. The constituents of attributed situations must be related to the designated central entity dubbed the situation's 'core entity' in a manner accessible to the observer relative to whose perspective the situation is attributed. Any viable constituent of a situation may in principle be designated as a core entity and a corresponding situation attributed to it.

In practice, however, situations attributed to some viable recipients can be hard to conceive. Explanations of imaginative resistance provide potential solutions to such issues. Insufficient contextualisation and rigid realism need to both be addressed as a result since otherwise, such hardships risk recurring throughout this work.

2.1 Attributed Situations

This section provides a formal, set-theoretic model of the type of situation being dubbed 'attributed situation'. Such situations include those denoted by expressions such as 'my situation', 'your situation', or 'the situation of the UK'. This model grounds the eventual template for reconstructing how theories of meaning become conceived based on how their corpuses present them. While the notion of attributed situations is treated as already present in how people think, the model is not intended to *directly* represent the structure of any corresponding cognitive unit. Rather, the provided definitions formalise how the relevant situations' constituents could be identified based on the features of the observed notion. The section first briefly discusses the nature of situations in general before specifying the selection principle characteristic of attributed situations and the role of observation relative to that principle and the resulting situations.

2.1.1 Situations and Selection Principles

When people refer to situations, they seem to be referring to various bounded totalities of states of affairs which are designated using different criteria. Such mentions are often specified using spatiotemporal coordinates, e.g. 'the situation in Russia' or 'the situation yesterday'. If such mentions designate *states of affairs*, situations would seem to be constituted by whichever kinds of entities comprise those. According to situation semantics, such states of affairs include (1) objects, (2) properties,[1] (3) relations, and (4) space-time locations.[2] Since it seems to respect the relevant folk metaphysics, this taxonomy is accepted in the current context with some qualifiers. Firstly, complex states of affairs are also included as a distinct type of proper constituent.[3] Since these states of affairs remain limited to configurations of the

[1] Although, Barwise and Perry consider properties a special case of relations: 'The 1-ary relations are called *properties* […]' (Barwise & Perry, 1999, p. 50; emphasis in original).

[2] '[…] we think of real situations as basic, with objects, properties, relations, and space-time locations arising as uniformities across them.' (Barwise & Perry, 1999, p. 50).

[3] This view is not alien to situation semantics, either: 'We will call the members of SOA *states of affairs* […]. *Situations*, the members of SIT, are sets (not classes) of these.' (Barwise & Etchemendy, 1987, p. 75; emphasis in original).

other constituents, including them does not affect what a situation *encompasses*. The inclusion is therefore benign, and it helps with later developments which involve specifying arbitrary entities. Secondly, each type of constituent is implicitly linked to how such entities are *conceived* instead of the taxonomy being committed to the existence of objects and such as substantial metaphysical classifications in the world. Such fundamental metaphysics are not the focus here and the approach remains agnostic on them.

The other feature inherited from situation semantics is expressing the constituents of situations using sets. The formal definition of attributed situations is provided in this chapter and further substantiated in the next. Definition 1 treats situations as the set of the total elements of five sub-sets. Each of those five sets corresponds to a type of constituent and contains the selection which the situation in question encompasses. Objects and locations ground the sets of properties and relations since at least some of each must incorporate some object or location. Definition 1 also permits properties and relations which apply to other properties and relations. Both properties and relations are expressed using ordered sets[4] that incorporate involved particulars. Because any included properties and relations thus provide the structure of continuous states of affairs, partial states of affairs are simplified to unordered sets of the situations' constituents. As such elements include the involved objects, no arbitrary states of affairs may contain discorporate relations and properties. Pairs of times and locations denote spatiotemporal coordinates.

Definition 1, Constituents of Situations (General):[5]

$S_x = \{O, P, R, A, C\}$

$E = (O \cup P \cup R \cup A \cup C) = \{e_1, e_2, \ldots e_n \mid n \geq 0\}$[6]

[4] These ordered sets are denoted using angled/chevron brackets.

[5] The values of variables (*m*, *n*, *q*, *x*, *y*, *z*) are non-negative integers, where zero denotes the empty set $\varnothing$. Variables *m*, *n* and *q* denote the number of variations and variables *x*, *y*, and *z* arbitrary variants. Superscripts identify a related type of set and subscripts specific variants of elements or subsets.

[6] The only role of set E is to assign a symbol to constituents from any of the sets.

$O = \{o_1, o_2, \ldots o_n \mid n \geq 0\}$

$P = \{\langle p_1, e_1\rangle, \langle p_2, e_1\rangle, \ldots \langle p_m, e_n\rangle \mid m \geq 0, n \geq 0, \{e_1, e_2, \ldots e_n\} \cap O\}$

$R = \{\langle r_1, E^*_1\rangle, \langle r_1, E^*_2\rangle, \ldots \langle r_m, E^*_n\rangle \mid m \geq 0, n \geq 0, E^*_x = \langle e_1, e_2, \ldots e_n \mid n \geq 2\rangle, (E^*_1 \cup E^*_2 \cup \ldots E^*_n) \cap O\}$

$A = \{E^\dagger_1, E^\dagger_2, \ldots E^\dagger_n \mid n \geq 0, E^\dagger_x = \{e_1, e_2, \ldots e_n \mid n \geq 2\}\}$

$C = \{(l_1, t_1), (l_1, t_2), \ldots (l_m, t_n) \mid m \geq 0, n \geq 0\}$

Explanation of Definition 1:

S_x: specified situation

E: set of elements in the situation

e_x: element of a situation

O: set of objects in the situation

o_x: instantiated object

P: set of properties

p_x: type of property

$\langle p_x, e_y\rangle$: p_x is instantiated by e_y

R: set of relations

r_x: type of relation

$\langle r_x, E^*_y\rangle$: r_x is instantiated by the elements of E^*_y

A: set of partial states of affairs

C: set of spatiotemporal coordinates

l_x: specific location

t_x: specific time

The rules definition 1 contains are that (1) the sets of entities instantiating properties or relations must include some which are conceived as objects,[7] (2) no unary relations are included though entities may stand in relation to themselves, and (3) no partial state of affairs is constituted by a singular element. The listed conditions for set membership express these rules. In effect, the first and third rule express that properties and relations are subservient to entities being conceived as objects: they may only be involved when such entities are present. Bare properties and relations may only be involved when *they* are being conceived as objects.[8]

2.1.2 Attributed Situations

Because definition 1 represents situations in general, attributed situations adhere to the rules the definition presents. Yet, definition 1 is insufficient to specifically capture *how* the constituents of attributed situations would be identified. For this task, additional conditions are needed. Definition 1.1 develops on this baseline by incorporating the principle which distinguishes attributed situations from other situation types such as those linked to named locations (e.g. 'The situation in London.). The situatedness of the entities to which the relevant situations are attributed is expressed as each constituent partaking in some relation which involves the designated core entity to which the situation is being attributed.[9] These relations need

[7] The notation expressing this rule for relations relies on *n*-tuples $\langle a_1, a_2, \ldots a_n \rangle$ being identical with *n*-1 nested pairs of the form $\langle a_1, \langle a_2, \ldots \langle a_{n-1}, a_n \rangle \rangle \rangle$. Each such nested pair is a set where $\langle a_{n-1}, a_n \rangle$ corresponds to $\{\{a_{n-1}\}, \{a_{n-1}, a_n\}\}$ (Barwise & Etchemendy, 1987, p. 42).

[8] How such reconceptualisations occur is discussed in section 2.2. However, the foundation is expressed by Barwise (1988, p. 179) in relation to situation semantics as follows: '[H]uman cognitive abilities make naturalization routine; everything is, or can easily become, upon reflection, a first class citizen. That is, anything humans systematically use is an invariant across situations so that they can step back and objectify it, and so treat it as a thing in its own right.' In other words, people seem able to treat anything they observe as a thing in its own right – a *kind* of object. In English, this process is exemplified by expressions which use nouns to denote particular non-objects, e.g. 'their self-identity relation' rather than 'them being self-identical'.

[9] This condition by itself is vacuous because there exist omni-applicable relations which relate anything to everything. For example, degree of similarity can be used to relate any two things. This problem is addressed in section 2.1.4 but the short answer is that the further condition that the included relations be observed appears necessary to restrict the types of relations and the spatial extension of the designated location. Additionally, even if these relations would make each

not be direct – an entity's situation might well encompass factors which only bear on its conditions indirectly such as a person's spouse's parents' broken coffeemaker having made the in-laws irritable during the couple's visit. The designated core entity need not have access to the presence of the relevant relations, either. From the outside, the complex relation between the broken coffeemaker and the resulting argument may well be included in the situation of the designated person without them ever becoming aware of the coffeemaker's contribution to their circumstances. Chapter 3 discusses the effects of access and different perspectives in more detail when the definition for attributed situations is finalised. For current purposes, the general model for attributed situations is formalised as follows:

Definition 1.1, Constituents of Situations (Attributed):

Assume Definition 1, amend set **E** as follows:

$$\mathbf{E} = (\mathbf{O} \cup \mathbf{P} \cup \mathbf{R} \cup \mathbf{A} \cup \mathbf{C}) = \{e_1, e_2, \ldots e_n \mid n \geq 1, e_x \in \langle r_y, \mathbf{E}^*_z \mid \mathbf{E}^*_z \cap \mathbf{E}^c \rangle\}$$

$$\mathbf{E}^c = \{e_1, e_2, \ldots e_n \mid n \geq 1, e_x \in \langle p^c, \mathbf{e}_y \rangle\}$$

Explanation of Definition 1.1:

Assume Explanation of Definition 1, with the following inclusions:

$\mathbf{E}^c$: set of constituents of the core entity

p^c: the property of having been designated as a core entity

Definition 1.1 mainly acts to introduce (1) set $\mathbf{E}^c$ which is a subset of **E** and covers the entities to which the situation is being attributed and (2) property p^c which defines members of $\mathbf{E}^c$. As per the definition, set $\mathbf{E}^c$ may never be empty as the presence of some core entity is necessary for deriving an attributed situation. Because there is no general criterion for being designated, the property of having been designated is treated as given, and each member of $\mathbf{E}^c$ has this property by definition. Although the members of $\mathbf{E}^c$ are collectively referred to as 'the core entity', the set may contain

attributed situation all-encompassing, the reason said situations would encompass all entities in existence would be specific to them, given the definition which would be responsible.

multiple elements. Expressing the identity of the core entity as a set mainly acts to showcase how other entities relating to its parts suffices for them to become (potential) constituents of its situation. In some cases, the principle is less than intuitive. If a concert is in part constituted by the members of its audience, then the relationship between a member of audience and an obstacle which corresponds to them stubbing their toe would contribute to the concert's situation alongside its media coverage and performers' availability. Once the role of observers is included in chapter 3, the answer becomes that while such facts remain *potential* constituents, they can (and often will) be subsumed by the wider picture available to perspectives required to view a concert as a core entity using the principles presented this chapter.

2.1.3 Core Entities

In the current context, the entity to which a situation is attributed is called its *core entity*. In definition 1.1, the core entity is represented by set $\mathbf{E}^{c}$. The core entity acts as the centre of the corresponding situations, relative to which the contents of the situation are defined. In this respect, it resembles the designated centre of a *centred possible world* (Quine, 1969; Lewis, 1979b), especially based on Lewis's criterion that the centre be a designated entity.[10] You are the core entity of any situation attributed to you, for instance. When this model of attributed situations is later translated to a template for framing the contents of theories of meaning, the core entity's position is inhabited by the so-called *instantiator* – whichever kind of entity the theory requires as the material expression for the form of meaning it posits.[11] While

[10] '[W]e might redefine centered possible worlds as pairs of a world and a designated inhabitant thereof.' (Lewis, 1979b, p. 147).

[11] Specifically, chapter 5 differentiates between a 'manifest instantiator' and a 'full instantiator' wherein the former designates the intuitive referent of whichever term is used for the entity to which meaning is being attributed (e.g. sentence). The full instantiator, in contrast, is defined relative to the internal requirements of whichever theory is being analysed, as expressed by this allusion. For instance, the unarticulated constituents posited within truth-conditional pragmatics (e.g. Perry, 1998; Recanati, 2002) – parts of statements which correspond to nothing in their linguistic expression – might require extending the material identity of the instantiator proper. As a result, the corresponding full instantiator would be inclusive of corresponding circumstances such as neural correlates of the utterer's beliefs about the time of utterance or even external factors such as a demonstrative gesture, its target, and the relationship established between the two.

situations are generally attributed to people, nothing *prevents* attributing them to arbitrarily designated entities within the metaphysical framework relative to which situations are being defined (properties, states of affairs, etc.). That *conceiving* the corresponding situations successfully requires comparably more effort is to be expected. However, every person is treated as able to potentially identify at least some elements which would sensibly be included in such situations unless they refuse to seriously attempt the task. While the nature of core entities is therefore largely uninteresting – they are simply designated – addressing the task of attributing situations to arbitrary entities allows this section to ground understanding the possibility of non-manifest instantiators. An entity which provides the worldly instantiation for a posited meaning is considered non-manifest when its boundaries do not respect the usual structure of human experience. An example would be the pair of an utterance and a set of other entities acting as context. A positive account explaining the criteria for an entity becoming treated as a viable core entity *can* be provided.[12] However, this chapter merely includes a response to potential issues people may encounter in attempting to conceive arbitrary entities in this role. Section 2.2 discusses the possible involvement of imaginative resistance (e.g. Szabó Gendler, 2000; Stock, 2005; Todd, 2009) and how it could be overcome in this context.

[12] An earlier draft did exactly that. In summary, attributing situations appears to rely on the ability to project onto an entity a sense of situatedness akin to one's own awareness of relative personal position. The main components of said experience include (1) local presence and (2) intentionality as the sense of being situated seems linked to being positioned amidst interest-laden entities. Thus, attributing a situation would involve the *intentional stance* (Dennett, 1971; 1983; 1987) being applied to reconceptualise the target's observable or imaginable behaviour as goal-oriented (Dennett, 1971, p. 90). The experience of visual fields acting as containers based on the boundaries of visual experience (Lakoff and Johnson, 1980, p. 30) is also likely involved in bounding such situations. In the absence of any tangible presence, visualisations using other conceptual metaphors would be needed for locating the relevant entity (e.g. a relation) within such a bounded field. The act of conceiving would then be constituted by a *blended space* (Fauconnier & Turner, 2002) wherein a mental space which includes the designated core entity and its observable surroundings is enriched with this overlay of projected intentional states (interests, etc.) and figurative framing. As a result, given access to applicable cognitive models, one may denote elements which would constitute, for instance, the situation of a one-sided relation of intimate attraction: such attraction has conditions for ceasing based on available circumstances, or it may evolve into either resentment or mutual interest under other conditions, and it lies 'between' the involved parties as a vector arrow from one to the other.

2.1.4 Observing Situations

Finally, the referents of any mention of a situation are treated as being dependent on specific *observers*. In effect, the selection of entities which becomes included in such a situation depends largely on someone or something applying the described selection principle to the entities they recognise. The notion is hardly unique, given how *scenes* constitute the prototypical real situation within situation semantics.[13] That *some* such organising principle is required follows from one general consideration and one specific to attributed situations, assuming the validity of the model presented above. Firstly, the manner in which situations are treated includes a level of arbitrariness: [14] despite the definiteness of an expression like 'the situation in London', not *all* entities in London appear to usually be designated. The resulting selection may be context-sensitive in various ways, of course, but such contextual guidance appears mainly linked to *attention*, specifically. Some entities' presence is more salient or pertinent than that of others. Thus, their inclusion appears to depend on whether they are recognised when the appropriate selection principle is applied. Attributed situations in particular require this limiter because there are omni-applicable relations which would make each such situation all-inclusive in the absence of a further selection principle. One such relation is degree of similarity: all entities resemble one another in *some* respects.[15] Similarity being a vacuous relation because

[13] 'Any part of the way the world *M* happens to be I call a *situation* in *M*. *Scenes* are visually perceived situations.' (Barwise, 1981, p. 27, emphasis in original). While situation semantics mainly analyses the abstract situations which represent such scenes, they are considered primary relative to meaning: 'Meaning's natural home is the world, for meaning arises out of the regular relations that hold among situations – bits of reality.' (Barwise & Perry, 1999, p. 16)

[14] The sense in which the term 'arbitrary' is being used expresses how a given situation's constituents appear to only *accidentally* adhere to more systematic principles of grouping. In other words, no singular principle such as any Gestalt grouping principle such as proximity, similarity, continuity, and so on (Wagemans et al, 2012, pp. 1180–1188) appears to suffice to explain the full extent of what attributed situations are conceived to cover although they can certainly contribute.

[15] The way in which degree of similarity relates any arbitrary set of entities can be elucidated using Dennett's notion of *Design Space* (Dennett, 1995, pp. 104–145; 2013, pp. 225–231): 'the multidimensional space of all *possible* designs, not just the actual [...] but – like the books in the Library of Babel – all never-evolved, never-constructed designs' (Dennett, 2013, p. 225; emphasis in original). Thinking of structure as describable by a potentially limitless number of sliding scales enables drawing pathways between any two points in this space of possibilities. Adjustments along these dimensions act like vectors and the shortest route from one design to another can

it applies to each element of any set is also a stance shared by both Searle and Davidson who express it in relation to their respective criticism of the view that metaphors are abbreviated similes: 'Similarity is a vacuous predicate: any two things are similar in some respect or other.' (Searle, 1977, p. 96) and '[…] everything is like everything, and in endless ways.' (Davidson, 1978, p. 254).

The need for some further selection principle to explain the non-comprehensive inclusion of applicable entities does not itself obviously entail that the role should be reserved to observers. Demonstrating such observer-relativity relies on abductive reasoning in favour of such a characterisation. Two main reasons exist for the observer-relativity: the need for a relative principle, and the fit between situations and observed scenes. Consider the conceivable variation in terms of inclusivity among (attributed) situations. One may draw a connection between a core entity and vastly removed entities such as when a supernova from before life on Earth is going to be recorded by someone's childhood rival, prompting an existential crisis that will doom all they hold dear. The same principles as this case are involved in many everyday situations, and if some such cases are considered acceptable, all involving the same principles ought to qualify.[16] Relative distance, whether in terms of position, time, or degrees of separation, may only matter if the limit is principled, and only a relative principle seems reasonable in the face of the available variation.

One ought to then question why people even experience there being situations, given how they are merely sets of circumstances. Barwise (1981, p. 26) points to (visual) experience: 'When I look around I cannot see a single thing-in-itself, some sort of ideal physical object stripped of its properties and its relations with other objects. What I do see is a scene, a complex of objects having properties and bearing relations to one another.' Such experience is unified in the form of a distinct scene

be identified as the degree of (dis)similarity between them. Perfect dissimilarity would exist between any two things which did not share any such dimensions.

[16] Critics might point to the use of future-oriented projection, inaccessibility to the target, and indirect relations. However, a football about to smash through your television screen in your absence involves all three and treating its presence as a part of your overall situation should be inoffensive.

but also granular rather than continuous in terms of the constituents. The source of experience unity likely involves the sense of containment involved in visual experience based on how vision as an embodied activity involves access bounded by eye orientation and related features. Even in the absence of these human features, sight as an embodied activity would necessarily involve limited range because of dispersion. This forms the basis for a container metaphor: the imposition of bounded structure at the level of conceptualisation.[17] What is treated as bounded may then be isolated, turning a set of circumstances into a distinct situation. As mental imagery relies on such models derived from real precedent, the contents of imagined scenarios are subject to similar experiential limitations (e.g. Kosslyn, 1980; Kosslyn et al, 2006). Treating situations as observer-relative thus helps explain the experienced nature of situations instead of merely providing a template for variable results. Simply put, '[d]ifferent organisms can rip the same reality apart in different ways, ways that are appropriate to their needs, their own perceptual abilities and their capacities for action' (Barwise and Perry, 1999, p. 11).

Definition 1.2 which expresses how observer-relativity manifests for attributed situations is provided here but its contents are largely substantiated in chapter 3. This formal definition specifies an observer to be an ordered set of embedded layers of integration, each of which consists of a set of inputs ordered according to the format of the integrating system. One such input involves a single point of access associated with a set of modes of access. Each mode of access corresponds to a systematic sensitivity to the presence of a specifiable set of stimuli. The basic idea of a set of points and modes of access is that any given observer recognises only the presence of certain kinds of entities within a set domain. For instance, no ordinary person may view all of existence, nor can a human being without special equipment sense radio waves. Yet, a human being *with* the appropriate equipment can achieve the

[17] 'Each of us is a container, with a bounding surface and an in-out orientation. We project our own in-out orientation unto other physical objects that are bounded by surfaces. […] But even when there is no natural boundary that can be viewed as defining a container, we impose boundaries – marking off territory so that it has an inside and a bounding surface – whether a wall, a fence, or an abstract line or plane.' (Lakoff and Johnson, 1980, p. 29).

latter. They would be considered a distinct type of observer since the equipment extends access and provides a further layer of integration through its interface. The final layer of integration defines the perspective of the observer but their identity includes each involved layer. Here are the details:

Definition 1.2, Constituents of Situations (Attributed; Observed):

Assume Definition 1.1, amend set E as follows:

$E = (O \cup P \cup R \cup A \cup C) = \{e_1, e_2, \ldots e_n \mid n \geq 1, e_x \in \langle r_y, E^*_z \mid r_y \in R^b, E^*_z \cap E^c \rangle\}$

$R^b = \{\langle r^b_1, \langle W, \langle r_1, E^*_1 \rangle\rangle\rangle, \langle r^b_1, \langle W, \langle r_1, E^*_2 \rangle\rangle\rangle, \ldots \langle r^b_m, \langle W, \langle r_n, E^*_q \rangle\rangle\rangle \mid m \geq 1, n \geq 1, q \geq 1, E^*_x \cap E^q\}$

$W = \{\langle I_1, \langle I_2, \ldots \langle I_n \rangle\rangle\rangle \mid n \geq 1, I_x \in I\}$

$I = \{I_1, I_2, \ldots I_m \mid m \geq 1, I_x = \langle\langle (I'_1, t'_1), D^*_1\rangle, \langle (I'_2, t'_2), D^*_2\rangle, \ldots \langle (I'_m, t'_n), D^*_q\rangle \mid m \geq 2,$
$n \geq 2, q \geq 2, \langle (I'_x, t'_y), D^*_z\rangle \in U\rangle\}$

$U = \{\langle (I'_1, t'_1), D^*_1\rangle, \langle (I'_2, t'_2), D^*_2\rangle, \ldots \langle (I'_m, t'_n), D^*_q\rangle \mid m \geq 1, n \geq 1, q \geq 1, (I'_x, t'_y) \in N,$
$D^*_z \subseteq D, D^*_z \neq \emptyset\}$

$N = \{(I'_1, t'_1), (I'_1, t'_2), \ldots (I'_m, t'_n) \mid m \geq 1, n \geq 1\}$

$D = \{d_1, d_2, \ldots d_n \mid n \geq 1\}$

Explanation of Definition 1.2:

Assume Explanation of Definition 1.1, with the following inclusions:

R^b: set of relations of observation

r^b_x: type of relation of observation

$\langle r^b_x, \langle W, \langle r_y, E^*_z\rangle\rangle\rangle$: r^b_x is instantiated by W relative to relation $\langle r_y, E^*_z\rangle$

W: set of layers of integration which correspond to the observer

$\langle I_x, \langle I_y\rangle\rangle$: I_x is a single level higher order of integration than I_y

I: set of layers of integration

I_x: specific layer of integration

$\langle\langle(l'_1, t'_1), D^*_1\rangle, \langle(l'_2, t'_2), D^*_2\rangle, \ldots \langle(l'_m, t'_n), D^*_q\rangle\rangle$: set of inputs up to $\langle(l'_m, t'_n), D^*_q\rangle$ is ordered according to the format of a layer of integration I_x

U: set of inputs

$\langle(l'_x, t'_y), D^*_z\rangle$: at (l'_x, t'_y), D^*_z applies

N: set of points of access

l'_x: specific location of access

t'_x: specific time of access

D: set of modes of access

d_x: type of mode of access

Specifically, definition 1.2 posits that relations between the designated core entity and other constituents only qualify when a specified observer has access to said relation which includes each member of the associated ordered set. Thus, a given relation being observed also involves the participating entities being observed, as exemplified by how distance or degree of similarity can only be judged when some impression of the involved entities is available. When a person may only rely on a conception not based on direct access, such as when a presence must be inferred, the cognised entity is what participates in the relevant relation even when the entity it represents exists. Observers themselves consist of ordered sets of embedded layers of integration involving set points and modes of access. The details are discussed in chapter 3. However, an example observer would be some specific individual interfacing with a computer screen. Information about the internal states of components like the hard disk gets formatted based on access pathways and this system of integration gets embedded in the conscious experience of the user. Observers are not a matter of individual potential but the overall capacity of an extended system of directed information transfer terminating in a system which retains access.

Below the level of integration lie the inputs, each of which involves a single point of access and a non-empty set of modes of access. As chapter 3 elaborates, the

various modes of access are linked to structures sensitive to the presence of specific states. Sensitivity in this context systematic reactivity. For instance, a rod cell on the retina of an eye becomes hyperpolarized in the presence of light which inhibits the cell from releasing neurotransmitters which in turn acts as a signal to a connected bipolar cell, causing it to release synapse-exciting transmitter. The tendency for such reactions constitutes the eye's sensitivity to light. Each point of access within a space corresponds to some such access-enabling structures. Definition 1.2 links points of access to spatiotemporal coordinates but technically, constructed spaces like mental spaces may involve other forms of organisation such as associative links for purposes of navigation, even when the experience may parallel spatiotemporal continuity. Because most of the cases relevant for the current project involve a degree of spatiotemporal organisation as overlays onto natural situations such as when a theory acts as a template for picking out suitable influences,[18] points of access are identified with spatiotemporal coordinates for the time being.

2.2 Inconceivability Issue

This section addresses the criticism some people have presented where they find themselves wholly unable to conceive of the kinds of situations being presented (i.e. unable to motivate the inclusion of any entities in the situation of the specified entity). The problem appears to be exacerbated for less conventional core entities such as arbitrarily designated states of affairs (e.g. the pair of that tree and the closest dog). However, should one encounter this problem, the first step is to remember that if one accepts that expressions such as 'my situation' are used in a manner where the intended referents are inclusive of the entities contributing to the relevant circum-

[18] The mental spaces linked to hypothetical observers are a potential subversion since the relevant models seem to only contingently involve (absolute) spatiotemporal relations. For instance, Fillmore's (1982) classic example of the frame for transaction of goods might prototypically involve payment preceding delivery of goods. A mental space involving this frame would not necessarily elaborate on the period separating them. For now, it is conceded that while studies (e.g. Kosslyn, 1980; Kosslyn et al, 2006) do show evidence of spatial, perspectival simulation in mental imagery, a more sophisticated model would be required to capture the other cases. The results of said studies are also not entirely uncontested (e.g. Pylyshyn, 1973; 2003).

stances, there already exists a baseline notion which is simply being formalised. The more extreme cases are not intended as uses which are ever realised. They explore the limits of the notion's in-principle applicability to refine the baseline conception into a framing device suited to be applied as a framing device which is compatible with the *possibility* of arbitrarily specified entities occupying this central position. That someone is unable to conceive how and what kinds of situations might be attributable to select bricks on the wall does not endanger the model but unless the underlying issue can be resolved, that person is likely to struggle to follow similar developments down the line. Additionally, while the problem of any number of individuals having trouble conceiving what is presented does not prove the model being unfit unless an inconsistency or other problem is identified, experienced inconceivability may be interpreted as a sign of such a problem with the model. This section seeks to prove that at least the possibility of reasons unrelated to an issue with the model as such can reasonably explain such experiences. That the risk exists because of relative rather than essential features of the model means that one would not be in position to infer that the problem conceiving some of the situations being treated as viable under this model results from some form of inconsistency. Alternative explanations which ought to be eliminated first (unless such an inconsistency is indeed located and pointed out) exist, as is demonstrated below.

The purpose of this section, therefore, is to address habits of thought which may hinder engaging with the presented ideas. This is not an attempt at immunising the model from criticism. If specific issues are pointed out, none of the considerations in this section apply. Mere experienced inability to conceive attributed situations, however, can be explained in terms of cognitive considerations related to the task of applying the model. Specifically, this section adapts considerations related to *imaginative resistance* (Szabó Gendler, 2000): systematic failure to imagine prompted states of affairs. While the notion is primarily associated with the inability to accept some fictitious moral claims as true relative to their settings, the shared task of world-building (Goodman, 1978) between fiction and theory appears dependent on overlapping cognitive dynamics (e.g. Fauconnier & Turner, 2002).

2.2.1 Imaginative Resistance

The inability to conceive some or all situations being attributed is assumed to relate to the kinds of reasons linked to *imaginative resistance* – the inability to imagine certain types of (fictive) states of affairs. What is known as 'the puzzle of imaginative resistance' primarily concerns people's (in)ability to entertain morally deviant states of affairs within a fictional narrative.[19,20] The difficulty in attributing situations concerns neither properly fictional, nor morally loaded imagining tasks, but as Weatherson (2004) argues, imaginative resistance splinters into distinct sub-puzzles. These sub-puzzles concern (1) authorial breakdown, (2) unimaginability, and (3) phenomenological and (4) aesthetic effects of relevant passages. Importantly, the second puzzle Weatherson identifies – the *imaginative puzzle* (Ibid. p. 2) – can be extended to non-fictional imaginative tasks. The puzzle concerns people's (professed) inability to imagine some specified type of world, such as a world in which a murdered child's gender determines whether killing them was justified.[21] While discussion on the imaginative puzzle tends to focus on fictive cases, the task of imagining the world being a certain way is *not* restricted to fictional narratives. For instance, such reconstructions appear to be involved in postulating natural laws through the inclusion of explanatory forces or entities as part of reality. As a result, if someone has trouble conceiving what the situation of a given entity would include, the reasons may well resemble those discussed in relation to imaginative resistance.

The literature on imaginative resistance contains two main divisions. Some try to explain the observed cases using general considerations instead of positing a

[19] The modern discussion on imaginative resistance was initiated by Walton (1994) though the term imaginative resistance was first applied to the phenomenon by Szabó Gendler (2000, p. 56). She borrowed the term from Moran (1994) who used it to describe a different phenomenon but her use of the term has since become predominant.

[20] 'The *puzzle of imaginative resistance*: the puzzle of explaining our comparative difficulty in imagining fictional worlds that we take to be morally deviant.' (Szabó Gendler, 2000, p. 56, emphasis in original).

[21] This is a reference to an example discussed by Walton (1994, p. 37) and Szabó Gendler (2000, p. 62) wherein a story is posited to contain the passage 'In killing her baby, Giselda did the right thing; after all, it was a girl.' Both posit that people generally have trouble imagining this claim to be true, even within the fictive realm it invokes.

dynamic unique to these instances. For instance, Stock (2005) considers alleged cases of imaginative resistance the result of insufficient contextualisation. While she denies the existence of imaginative resistance proper, she is addressing the same types of cases which is why her viewpoint is addressed below. People who do agree on the existence of special cases disagree on the reasons why the associated states of affairs cannot be imagined. The corresponding viewpoints can roughly be divided into impossibility theories (e.g. Walton, 1994) and unwillingness theories (e.g. Szabó Gendler, 2000; 2006; Todd, 2009). The current take focuses on the latter which posit there being various reasons why people who lack no requisite cognitive material cannot will themselves to complete the presented imaginative tasks. For instance, strong realist commitment may interfere with such tasks (Todd, 2009).

The way this section approaches the matter involves first discussing the effects of culturally available models on the moves which attributing situations to non-standard recipients requires. Specifically, section 2.2.2 differentiates between problematic kinds of contextualisation which even allow for a sense of inconsistent states of affairs being conceivable and more standard contextualisation before proposing which forms of the latter help with conceiving the situations of non-standard recipients. Since inability to conceive such situations even with access to suitable cognitive models cannot be guaranteed, section 2.2.3 then addresses a potential further issue in the form of interaction between rigid realism and the seeming involvement of considerations incompatible with the state of the world. The section attempts to disarm such reactions by clarifying the role of such considerations. For instance, instrumentally attributing intentional states to rocks is simply a means to prime applying models derived from intentionality to rocks as a means to highlight relations in which they participate such as being split by a maul.

2.2.2 Contextualisation

Outside logical contradictions, almost any state of affairs ought to in principle be conceivable. While inability to conceive one *may* therefore signal a contradiction, insufficient context is another factor which may block imagining a scenario. For in-

stance, Stock (2005) argues that (almost)[22] any scenario is imaginable with access to enough cognitive resources to contextualise how it would attain.[23] An extreme example is Szabó Gendler's *Tower of Goldbach*[24] which attempts to illustrate that even incoherent states of affairs may be imagined given sufficient contextualisation. Her intent is to show why incoherence is insufficient for imaginative resistance to motivate an alternative to Walton's (1994) treatment of imaginative resistance as implicit contradiction. In fact, if the example succeeds in prompting some people to imagine twelve both being and not being the sum of two primes, it risks contextualisation turning into a means to bypass a reader's critical faculties.[25] Thus, a

[22] Stock does admit that her explanation has certain limitations. Even if conceptual impossibility such as that evoked by Szabó Gendler's *Tower of Goldbach* (2000, pp. 67–68) which is discussed below were ignored, fictional identities are in part defined by the established contents of the relevant fictions. Thus, Stock (2005, p. 623; emphasis in original) agrees that enriched context cannot solve instances where 'we *already* have detailed information which context is being fictionally posited, and this is such that the other judgement employed by the relevant proposition is straightforwardly incompatible with that context.' To use Moran's (1994, p. 95) example, given who Duncan and Macbeth are as well as the setting in Shakespeare's play, it cannot be the case that 'The murder of Duncan is unfortunate only for disturbing Macbeth's sleep.' Were the context to be altered to accommodate this claim, it would risk the identity of the characters the claim mentions being altered as well. Such cases, however, are irrelevant for current purposes.

[23] 'The upshot is that failure to imagine (GK) cannot be explained in terms of conceptual impossibility, for given the nature of moral judgement, it must in fact be possible, […] to find a surrounding context for any such single proposition which shows it to be conceptually coherent. This observation, however, leads immediately to a more promising train of thought: namely, that readers of (GK) *contingently* fail to understand it. Contingently, we are unable to think of a surrounding context for a proposition such that (GK) would be true in it, in which case we are, perhaps only temporarily, unable to understand (GK).' (Stock, 2005, p. 619; emphasis in original). The case Stock calls '(GK)' is Walton's (1994, p. 37) example which states that 'In killing her baby, Giselda did the right thing; after all, it was a girl.' The example context Stock (2005, p. 617) suggests is Giselda's baby having been born into a situation where all women are subjected to fates worse than death.

[24] In Szabó Gendler's (2000, pp. 67–68) thought experiment, mathematicians prove Goldbach's conjecture ('every even number is the sum of two primes'), angering God who then punishes their hubris by making twelve no longer adhere to the rule. The pleas of the people make God reconsider and promise to retract the punishment if twelve true believers are found and presented. However, this condition is impossible to fulfil while twelve is not a sum of two primes because the twelve candidates were found in groups of five and seven, respectively. To resolve the situation, a divinely ordained judge decrees that henceforth twelve both is and is not a sum of two primes. Thus, the conceptual impossibility to be imagined is twelve both being and not being the sum of two primes. The narrative devices she uses to motivate imagining a conceptually impossible state of affairs include divine intervention and omnipotence.

[25] Dennett (e.g. 1991, pp. 399–400) criticises some philosophical thought experiments for doing exactly this by abusing unwarranted intuitions using misleading narratives (e.g. invoking bizarre

distinction is made between conceiving a state of affairs being realised and conceiving *that* a state of affairs is being realised. The target is the former. While the *total* states of affairs need not be imagined in a clear and distinct manner, at least one case exemplifying the principle being generalised (e.g. an entity being included in another's situation) ought to become *manifest*. In contrast, the latter cases which effectively involve accepting that a proposition is true relative to a worldbuilding narrative are distinguished from the former because they appear to involve *semi-propositional* metarepresentation (Sperber, 1985, pp. 51–53; 1996, p. 72).[26] In such cases, truth is attributed to a quotational representation of a scenario (e.g. 'twelve both is and is not the sum of two primes') based on epistemic heuristics like trusting a testimony rather than personal understanding of the involved state of affairs.[27]

Based on this hypothesis, one might link the imaginability Szabó Gendler (2000) attributes to *Tower of Goldbach* with the implicitly presented notion of *true omnipotence*.[28] Even without being aware of theological voluntarism, people subjected to the monotheistic dogma of Abrahamic religions seem to pre-reflectively understand omnipotence as inherently unconstrained. The exact cognitive models likely vary but for instance, one who accepts the possibility of the story's God possessing (true) omnipotence would have no reason to doubt whether the incoherent

notions which may only be conceived in the abstract). That some thought experiments are problematic in this respect is considered true here.

[26] 'A conceptual representation that fails to identify one and only one proposition, I shall call a *semi-propositional representation*.' (Sperber, 1985, p. 51, emphasis in original). In essence, a person who holds to such (mental) representations – such as quotational beliefs where they believe that 'God can do anything' rather than that God can do anything – is unable to fully reconstruct the scenario being expressed due to lack of understanding what that would involve despite potentially even assenting to the claim.

[27] Sperber (1985, p. 53; 1996, p. 72) emphasises how semi-propositional representations are part of normal learning even though they can also be used to avoid cognitive dissonance by muddling the relationship between believed claims. For instance, someone who is told by a teacher they trust that 'humans and chimpanzees share a common ancestor' may justifiably accept the claim before they can realistically conceive the nature of the evolutionary processes enabling it.

[28] True omnipotence is here equated with the type theological voluntarists advocate. For instance, Descartes (1984, p. 294) accepts that an omnipotent being could alter even the laws of mathematics and logic to accommodate contradictions: 'God could have brought it about [...] that it was not true that twice four make eight.' This conception of omnipotence contrasts the position according to which omnipotence only enables all acts which adhere to necessarily true principles.

in-story proclamation is true. The reasoning would be that if 'God' may be omnipotent, there is no reason this one would not be, and if they are omnipotent, they can achieve the impossible. Therefore, the contents of the provided testimony would be accepted relative to the narrative in the aforementioned quotational sense. Alternatively, the association between word and divine creation can ground an interpretation where 'God' proclaiming a proposition would suffice to force the world to conform. The divine testimony by itself would represent the state of affairs attaining since the word would be made flesh (e.g. 'Let there be light' resulting in there being light) by virtue of its utterer's supposed divine nature. These examples are intended to show how *specific* cognitive models may enable forms of authorised intellectual negligence such as naïve forms of faith where details in the conceived state of affairs are *substituted for* by semi-propositional metarepresentations.

Since conceptions based on these forms of contextualisation may be inconsistent, the form of contextualisation used to help conceive attributed situations cannot abuse such means. This distinction must be recognised as such abuse appears to occasionally occur in philosophical practice. For example, a claim may be embedded in an authoritative assertion such as the description of a scenario you *order* the reader to imagine.[29] The candidates for cognitive models without which attributed situations turn inconceivable come in three categories. Firstly, one might simply lack a prototype for such a situation *including* an entity. Instead of situations having been treated as constituted by sets of distinct entities, they would have been only considered in a holistic manner where only the totality was referred to for judgements such as 'your situation could be worse'. The solution is to focus on the contributions of those constituents to how the totality is judged. For instance, if a person finds themselves in a precarious situation, the reason likely involves the presence of some source of threat. Consider a hiker hearing a large beast in the wilderness and whis-

[29] Arguably, this exact problem occurs in Jackson's (1982; 1986) Mary the Colour Scientist thought experiment which involves a person being attributed the totality of scientifically verifiable facts about colour. *That* Mary has such domain-specific omnipotence is an axiom yet as Dennett (1991, p. 399) states: 'The reason no one follows [Jackson's] directions is because what they ask you to imagine is so preposterously immense, you can't even try.'

pering to themselves: 'Okay, *this* situation is probably bad.' One may specify the referent of 'this situation' either as a generic description of a hiker in the presence of a predator or as the specific circumstances of the utterer relative to themselves. While the former alternative is undoubtedly *possible*, it requires the person to distance themselves from their position enough to approach it from an allocentric perspective. The latter option thus seems more *reasonable* as the default interpretation because the person need only observe the presence of a threat to themselves. The interpretation substantiates 'bad' in relation to the person's own interests instead of leaving it as a generic value judgement, and the demonstrative 'this' can be applied directly to the actual circumstances rather than to a model then superimposed onto them. Thus, answering what makes the situation bad would involve designating the beast in relation to the interests of the hiker, making it a constituent of the hiker's situation.

Needing to treat such personal situations as constituent-involving is not the only potential source of problems involving a need for further contextualisation. Attributing situations to non-standard core entities such as bare relations is particularly dependent on applicable conceptual metaphors (Lakoff & Johnson, 1980) for framing their behaviour in terms of intentionality and for visualising their status. As the previous example demonstrates, the target's intentional states such as interests help motivate including a particular entity in a situation being attributed to it. Knowing that the threatened hiker will slip on a specific leaf ought to increase willingness to consider the presence of *that* leaf rather than the overall precariousness of the terrain a part of the hiker's situation. Meanwhile, visualisation helps position conceived abstract entities relative to the potential constituents of their situation. Should visual fields likely act as the natural containers which ground how situations are conceived (Lakoff & Johnson, 1980, p. 30), core entities must manifest in said scenes.

Models for intentionality involve the same considerations as applying the *intentional stance* (Dennett, 1971; 1983; 1987): parallels to observable behaviours reliant on possession of information. Some such associations are culturally encoded

such as sluggish compliance with the intended results of one's actions (e.g. being moved) being likened to stubbornness. However, ensuring maximal applicability requires focusing on the most basic conditions attributable to any constituent of a situation besides coordinates: cessation and change.[30] Personal existence being terminated relates to every other potential interest which would also cease to apply. This makes it appear universally interest-laden: when it is not feared, it is instead revered (e.g. Buddhist nirvana). Similarly, change always shifts individual capacities. If any such capacity is attributed value, change has *some* net effect in terms of those values: improvement or degeneration. Folk teleology applies the intentional stance when it treats the results of prototypical behaviours as purposive. As fulfilment of purpose is generally treated as positive, the effects of change can be related to such usual trajectories. In practice, then, one ought to consider what conditions may contribute to the cessation of an entity (or prevent it, prolonging its experienced existence) or change the projected course of its existence. For instance, an arbitrarily denoted state of affairs might disintegrate if its constituents scatter, and this represents its termination onto which a negative value relative to its interests is readily projected for the above reasons. Schools of fish or flights of birds provide a familiar model for such collectives. Similarly, changes in the constituents can affect the probability of such terminating events.

Visualisations, on the other hand, are treated as largely dependent on the availability of apt grounds for conceptual metaphors (Lakoff & Johnson, 1980) and therefore, ecological affordances for structuring thought (Clark, 1997, Ch. 9). If conceptual metaphors already largely underlie how abstract entities are conceived (e.g. the *movement* of time), conceptions of properties, relations, and the like already rely on similes based on concrete experience which can be consciously tapped for cur-

[30] For metaphysical purposes, whenever people systematically conceive identity as retained through a transformation, it counts as 'change', and whenever attributed identity shifts, 'cessation' has occurred. As Barker and Jago (2014, pp. 193–194) note, what becomes treated as 'total destruction' need not involve more than ensuring that no unique inheritor for continued identity remains. The example they use involves a mass of gold: chipping off a part is conceived as damage it *retains* but chopping it to two or more fungible pieces removes non-arbitrary grounds for unique identity.

rent purposes. Observable properties, for instance, seem to be treated like *coatings* (e.g. paint) which stick to the relevant entities. After all, the very act of separating the identity of an entity from the totality of its properties in terms of its substance implies that something beyond such properties *underlies* its existence. The link between colours and paint is the most obvious example but cartoons and other edited media provide visualisations which help extend the logic to features like the possession of a mouth by providing a cognitive model for how the visible signifier (lips, teeth, etc.) may slouch off a person. Such models provide the means to *objectify* bare properties and thus position and situate them. While such models may not adhere to how reality itself *literally* operates (a mouth, for instance, is a hole rather than a sticker), they only help structure aspects of the abstract using more approachable templates. The aspects of these phenomena being highlighted in this manner are no less real for the related conceptions involving some elements which do not correspond to reality but are either required or helpful as part of the conceptualisation. Assuming that conceptual metaphors are part of human cognition, the very same dynamics would also cover very basic, unproblematic conceptualisations such as time being treated as either static or mobile depending on the context (Lakoff & Johnson, 1999, pp. 139–147). Visualisations are no more inherently problematic than such cases.

Electing to apply specific conceptualisations to help conceive the situations of non-standard core entities ought to thus help with the task. Further conceptualisations for properties include ownership, symbiosis (or parasitic dependence), and directory entries, and each such conceptualisation embodies a partial mapping which highlights some characteristics associated with properties (e.g. transience, dependence). Each also grounds different similes for the realisation of the relations discussed above such as parasites' survival depending on their host living and remaining oblivious helping conceptualise properties' cessation. A harmful but remediable property such as bad fitness would be subject to such considerations and therefore a situation attributed to it would be sensitive to motivators for the person to exercise. Relations, on the other hand, form *connections* which may be (in)direct, differently directional, and of various strengths. As a result, *lines* form the simplest representa-

tion of relations, and they can be cut, knotted, or fortified in various ways. Thus, for instance, a relation which is strained might snap and therefore cease such as when people drift apart.

In evaluating the suggested conceptualisations, one ought to keep in mind the presented difference between means to bypass the need to conceive the details of a state of affairs and the means to structure them through appropriate framing. The details of these scenarios are not made more abstract through methods such as quotational representations. Those details are instead made more concrete by tapping available means to frame them. The problem with non-standard core entities – i.e. inanimate objects, bare properties and relations, or arbitrary states of affairs – lies in the degrees of separation between them and the entities to which situations are standardly attributed like human beings. These methods highlight the relevant aspects in which the former resemble the latter. Ideally, anyone struggling to identify which entities would participate in the situations of non-standard recipients because they did not utilise such tactics will understand what is involved in the task by now. Being able to conceive situations for such entities should alleviate the task of conceiving the possibility of theories of meaning requiring more complex and potentially non-continuous entities as the instantiators for the sorts of meanings these theories supply. In both kinds of cases, these unintuitive entities must be conceived as parts of their respective models, in the central role they share. However, it remains possible to still find oneself unable to bring oneself to conceive such situations. As such, the rest of the chapter discusses further potential reasons based on explanations for imaginative resistance and tries to alleviate associated concerns.

2.2.3 Realist Resistance

That the form of contextualisation discussed above might suffice to make notions such as 'the situation of that rock' palatable is expected to remain a distasteful solution to philosophers of a certain bent common within the analytic tradition.[31] A

[31] While evidence is circumstantial, a survey by Bourget and Chalmers (2014) on philosophers' positions on various issues depicts non-sceptical realism concerning the external world (81,6%), sci-

degree of realism concerning the natural grounding of categories where nature has joints at which to carve it[32] appears a likely cause for such reservations, especially when it is accompanied by intuitions that associate truth with correspondence.[33] Expressed bluntly, the problem is how abstract properties and the like cannot *in reality* possess the full gamut of properties conceiving them as situated would require such as intentional states. Of course, the problem here lies in assuming that as a result, there exists no meaningful sense in which such framing may depict *anything* real. The presented notion of attributed situations is a formal refinement and exploration of the conceptual limits of the more intuitive notion with which people operate in using expression such as 'your situation'. Understanding the sense in which the less conventional cases remain no less viable than more familiar instances relies on the capacity to assume a stance in which identity-involving intuitions based on direct observations are *temporarily* suspended. In the case of non-standard core entities and the associated situations, such suspension involves accepting the possibility of non-substances such as properties and arbitrarily designated states of affairs being positionable and subject to being affected through environmental interactions. The manner in which the possibility is then substantiated no longer requires such suspension. In the case of the identities of meaning-instantiating entities discussed later,

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entific realism (75,1%), and externalism concerning mental content (51,6%) as clear majority positions (Ibid. p. 476). The study primarily concerns analytic philosophers (Ibid. p. 468).

[32] The notion of carving nature at the joints comes from Plato but it is present, for instance, in Lewis's (1983, pp. 346–347) distinction between natural and unnatural categories provided by a nominalist account where the former correspond to such supposedly mind-independent boundaries between distinct entities.

[33] Such intuitions are not limited to people who subscribe to correspondence theories of truth according to which true descriptions are made so by – roughly speaking – the expressed relations being unequivocally mappable to the relevant states of affairs (e.g. Russell, 1912, p. 129). For instance, according to Strawsonian performative deflationism (Strawson, 1949), asserting the truth of some claim describes no *particular* relation but rather, serves to express agreement, acceptance, or endorsement. However, under specific circumstances, such judgements appear to involve an observed correspondence between the meaning of what is stated and how things seem. The deflationist would oppose over-generalising this relation into a universal theory of truth rather than it bearing a relation to how the notion of truth is used. Depending on how one delineates the proper application of this intuitive notion of reality determining truth and falsity, then, claims about the situations of unconventional recipients of such attributions may appear non-truth-abiding for the sorts of reasons addressed below.

the suspended assumption concerns the proper referents of terms such as 'word' in the context of theory-specific discourse. In either instance, one must first be willing to conceive such a state of affairs as possible and then, to relate that possibility back to their sense of the real as part of recognising its potential significance. Both types of tasks involve merely applying a schematic template for re-structuring what is already present through an added filter. While this task involves few substantial meta-physical commitments, there are reasons addressed below why either stage of the process may be complicated by rigid realist intuitions.

Todd (2009) observes how realist intuitions risk imaginative resistance.[34] His reasoning can be summarised as stronger and more extensive realist expectations exerting normative force on what is considered imaginable: '[…] the views and commitments of those more susceptible to imaginative inability or resistance in the relevant cases are somehow less 'flexible' in what they allow to be likely, possible, or desirable alternatives to the relatively 'rigid' and well-articulated commitments they hold to be true. Normative concepts and propositions […] may be more susceptible here […] partly because they are essentially or very tightly tied to certain conditions, and to the evaluative stances or world-views of those holding them, such as that there is, as it were, (felt to be) more at stake in the imaginative projects involving them.' (Ibid. pp. 197–198). The inter-related key components here are the (1) rigidity of realist commitments, (2) their normativity, and (3) the linked stakes. Even though Todd is primarily discussing forms of ethical realism, ontological realism appears to share these features for reasons addressed below.

Musgrave's (1995, p. 132) definition of folk realism demonstrates why forms of ontological realism motivated by this intuition can be expected to be rigid: 'Folk-realism is the belief that there is a real world outside of us and largely independent of us. This world is populated with objects that do not usually depend upon our

[34] '[…] the imaginative projects of those holding realist commitments *may* be more susceptible to resistance and inability than those holding non-realist commitments, and those holding articulated theoretical commitments yet more susceptible than those possessing less articulated pre-theoretical ones; […]' (Todd, 2009, p. 197, emphasis in original).

doings for their existence and which continue to exist when we are not perceiving them.' Should one subscribe to such realism, the nature of the external world becomes *set*, and how people conceive it may only be compared with the facts. The assumed rigidity of the real also seems to ground a *normative* view on such comparisons. Given this framework, truth should be expected to generally be associated with (some form of) *correspondence*, and the supposed real provides the proper measure of truth since its rigidity ensures a common standard. As a result, the possibility of truth as correspondence is (experienced to be) at stake when considering how rigidly independent of people's ways to conceive it the world should be treated. The value of such stakes is made ever more evident when one considers how folk realism undergirds scientific realism and thus (at least seemingly) the possibility of acquiring objective knowledge systematically.[35,36]

Such rigidity being motivated by a feeling of such high stakes all too easily entails that any seeming subversion of one's sense of the real turns into a threat to the possibility of systematic knowledge. While the only claims the proposed model makes about reality itself involve the functioning of human cognition rather than the nature of the objects thus represented, conceiving the situations attributed to non-standard core entities in particular is susceptible to such resistance. Specifically, the relationship between one's sense of the real and other mental spaces has two possible break points where rigid realism can prevent proper integration. Firstly, one may be prevented from modelling the mental space relative to which an entity has its situation defined because it is subjected to the same rigid rules as one's sense of the real. Alternatively, re-integrating the presence of said situation with one's sense of the real may invite a clash due to its reliance on representing entities in a manner

[35] 'So scientific realism is not completely metaphysically neutral, since the scientific realist is also a folk-realist.' (Musgrave, 1995, p. 133). After all, if the scientific enterprise is to be a realist project, there must be a common standard to which results can be related and against which others' claims can be tested.

[36] Bernstein recognises the dread associated with loss of singular objective foundations and dubs this dichotomy *Cartesian anxiety*: '*Either* there is some support for our being, a fixed foundation for our knowledge, *or* we cannot escape the forces of darkness that envelop us with intellectual and moral chaos.' (Bernstein, 1983, p. 18, emphasis in original).

antithetical to folk realism. Thus, even when the rigidity of one's realist intuitions does not prevent success in expanding towards hypothetical possibilities, the same level of rigidity can result in imaginative resistance by preventing said possibilities being reintegrated with one's sense of the real. This difference likely stems from how only the task of reintegrating a *hypothetical* possibility as a *real* possibility involves adjusting one's sense of the real.[37] In essence, it might be fine to suppose[38] what the situation of some non-standard core entity *would* be but then accepting that this hypothetical situation can truly be attributed to it would demand accepting the presence (in some capacity) of a corresponding entity.

The first of the presented scenarios concerns being able to derive a hypothetical mental space involving the degree of intimacy with one's sense of the real which having to largely rely on representations of recognised particulars involves. In this context, said hypothetical space involves the schema based on which a situation would be attributed: the representation of the core entity as a being with intentional states which link it to the surroundings of a position ascribed to it. Such constraints formed by prior experience and associated expectations readily apply to representing various counterfactuals and thereby invite imaginative resistance when said scenarios rely on one's sense of the real as framing. In this respect, both realist moral principles and ontological assumptions appear equally likely candidates to be imported and to clash with contrary prompts. This notion of imaginative resistance involving imported assumptions itself comes from Mahtani (2012, p. 426) who claims

[37] This difference between experienced hypothetical and real possibility can be characterised using Gibbs's (1970, p. 340, emphasis in original) distinction between formal and real possibilities: '[…] *real* possibility, i.e., the kind which, unlike mere *formal* possibility, is correlative to *actuality*. Actuality as meant here is not something which can belong to mathematical objects or formal truths. It is the mode of existence proper to causal agents and patients.' What is in reality impossible may still be formally possible and what is formally possible is not necessarily possible in actuality. The same relations tend to apply when a state of affairs is perceived as either a real or hypothetical possibility.

[38] The distinction between supposing and imagining is briefly addressed by Szabó Gendler (2000, p. 80): 'The source of this resistance can be traced to the way in which imagination requires a sort of participation that mere hypothetical reasoning does not.' Thus, supposing in the sense being intended equals accepting the posited state of affairs as a hypothetical possibility while imagining it would entail tacitly accepting the state of affairs as something closer to a real possibility.

that ''[…] moral principles do not get to be true in fictional worlds by being imagined. Rather, general moral principles hold in fictional worlds because they are automatically imported into them, along with a host of other background claims that are not explicitly stated by the author.' That some assumptions are imported is undeniable, whether Mahtani's account of imaginative resistance for the moral cases is correct or not, and these assumptions certainly include basic metaphysical intuitions such as how causality operates. Essentially, how rigid said assumptions are sets a threshold for necessary contextualisation and the stronger the connections to one's sense of the real are, the stricter the expected adherence becomes. For example, it is easier to accept a cartoon rock being conscious since it only bears a relation of resemblance to real rocks than to entertain a designated real rock's hypothetical intentional states because even a hypothetical space derived from the real is not similarly detached from it. As Todd (2009, pp. 196–198) notes, well-articulated realist positions are more likely to be especially rigid which predicts philosophers being particularly susceptible to this form of imaginative resistance even if it need not be exclusive to them, given the extent to which such basic assumptions also apply at the level of pre-reflective common sense (Bourdieu, 1977, pp. 164–170).

In contrast to Mahtani's (2012) import-based account of imaginative resistance, Szabó Gendler (2000, p. 77) offers the implicit exportation of results as the source of failures to conceive states of affairs: ' […] cases that evoke genuine imaginative resistance will be cases where the reader feels that she is being asked to export a way of looking at the actual world which she does not wish to add to her conceptual repertoire.' While these are competing accounts, within the current framework, each appears to describe a failure at a different stage of the process. On the one hand, imported assumptions may prevent constructing mental spaces wherein counterparts of pre-recognised entities possess features antithetical to the realist principles to which the originals are subjected. On the other hand, trouble exporting involves blending the results with the space(s) responsible for one's sense of the real. Effectively, if one subscribes to more objectivist forms of realism, even if one might entertain the notion of attributed situations, treating the results as viable means to

structure experience appears to engender attributing to them a degree of meta-physical reality incompatible with the figurative models used to specify their elements. When *independent* existence (in contrast to one defined relative to particular forms of experience) is treated as the *standard* for ontological viability, conceived entities may only be treated as either existent in this objective sense or fictions. Attributed situations – especially those of non-standard core entities – are clearly not the former but in the absence of more nuanced alternatives, treating them as anything but pure fictions would imply an unsatisfactory degree of objective reality. Hence, such exportation is refused, as Szabó Gendler (2000; 2006) argues happens when one is prompted to imagine a reprehensible moral reality as part of a fiction such as murder of innocents being righteous. The mere possibility is denied since accepting it would have real implications.

In the case of problematic imported assumptions, the solution to such worries remains to just be conscious of these suppositions and to remind oneself that representing reality directly and in full is not part of the purpose of the intermediate hypothetical space. Such mental constructs only act as a means to define which entities would be involved in the situations of whichever entities are being designated as the intended core entities. Any involved considerations which do not directly and fully correspond to reality are purely instrumental and represent the means to conceive such situations using available cognitive resources. Once this baseline has been achieved but one still cannot accept how such situations could be real when specifying their constituents relies on such considerations, the problem becomes accepting the possibility of such exports from scenarios involving a cognitively enriched and hence 'impure' model of reality. Yet, such supplementary scaffolding is not inherently any more problematic than standardised cognitive metaphors such the different ways in which time is conceptualised. Ultimately, situations are simply designated states of affairs. Attributing them even to unconventional recipients holds no meta-physical stakes unless one elects to treat such situations as objectively real, and there is little reason to support said attitude. In the current context, all that is presented is how people appear to derive such situations and how the model can be generalised.

2.3 Takeaway

The purpose of this chapter is to introduce the structure of the schema which is implicit in expressions such as 'your situation', at least if said reference to situation is treated as denoting a set of circumstances and the involved entities rather than as expressing current status in a manner synonymous with 'condition'. The notion of observers included in the schema to represent the perspectives relative to which such attributions are defined is discussed in more detail in the next chapter. Such observers are given this treatment to provide a material basis for how texts and the like may be said to embody specific perspectives. Namely, they act as systems which integrate information from various sources (the authors' own observations, etc.) in a format which allows for access and re-integration by the readers in the form of structurally relatively uniform mental space constructs (Fauconnier, 1985; 1997). The model provided a material basis for such elements as the perspective present in a text or set of texts.

The model presented here is that similarly to the situations utilised by situation semantics (e.g. Barwise & Perry, 1999), any situation may be represented as a set of the entities being designated. In this instance, besides the inclusion of what gets experienced as objects, properties, and relations, both arbitrarily defined yet independently recognised states of affairs constituted by the former and spatiotemporal coordinates may be treated as proper constituents. The inclusion of the former is intended to recognise how sometimes, constellations of entities to which there exists no conventional means to refer as a collective and which do not fit how people naturally structure their surroundings (e.g. Rosch, 1987; 1981) may regardless contribute to experienced scenarios.[39] The same is assumed of spatiotemporal coordinates. For instance, that the cat is in the wrong place at the wrong time may affect its owner's situation independently of the cat simply being connected to them through owner-

[39] In discussing the existence of negative facts, Barker and Jago (2012, p. 129), for instance, note how we may attribute causal power to such complex states of affairs and events. In their example, plants desiccate and die from lack of watering by their owner who had been kidnapped by aliens. The relevant state of affairs responsible for the plants' death includes both the conditions on Earth *and* two million light years away where the owner has been transported.

ship. Explicitly highlighting that such entities can contribute to situations also allows for reference to them later. Fully specified instantiators of meaning may potentially consist of unconventional constellations of entities, for one. The tracking of the relative coordinates a theory of meaning addresses as the scope it implements within the designated corpus involves analysing the involved coordinates.

If situations are states of affairs constituted by a set of designated entities, there ought to be some means of specifying which entities are being designated. In some instances, they might occupy a specific location, such as when someone mentions 'the situation in that room', for instance. When situations are attributed to specific entities through formulations such as 'your situation' or 'the situation of the UK in relation to the rest of Europe', any constituents being related in some fashion to said *core entities* is treated as a necessary condition for their inclusion. Unless they relate to the core entity somehow, there is no sense in which they ought to be treated as part of its situation. However, this condition is not sufficient: every entity relates to every other entity in *some* fashion. Given how people thinking in terms of situations in the first place can be traced to aspects of perception such as the boundedness of visual fields, the included relations also needing to be accessible to and processed by some observer is treated as the best further delineating principle. As a result, an attributed situation consists of the designated core entity and the entities participating in relations that involve it and are being observed from the involved perspective which need not belong to the core entity itself.

The above model is a formalisation of the likely schema for determining which entities a situation being attributed includes. It is compatible with the possibility of attributing such situations to any kind of entity which may participate in such a situation – including arbitrarily designated states of affairs. While attributing situations to such entities is unconventional and therefore references to such situations may appear uncanny or even ungrammatical, such situations are not *inconceivable* in themselves. However, some people have reported having trouble imagining what entities could possibly be involved in such situations and used the fact that

they find themselves unable to conceive such situations to imply that the model which allows for them must be flawed because of it. Yet, such trouble can also be explained based on various factors associated with *imaginative resistance* – the experienced inability to imagine states of affairs which are conceptually consistent (e.g. Szabó Gendler, 2000). Not only do the possible explanations for such a reaction provide an alternative to the best explanation being something internal to the model (until proven otherwise) – they also outline a means to overcome similar issues going forward. For instance, trouble conceiving complex, non-continuous states of affairs as the potential instantiators of meaning ought to be ameliorated by the provided models for the ways in which such entities may be subject to environmental factors.

Specifically, there are at least three distinct conditions which may result in the feeling of such situations being inconceivable. Any number of them may apply at a time since each relates to a different part of the process of conceiving such situations. Firstly, one may simply lack the proper cognitive models and context for imagining such a state of affairs (Stock, 2005). However, suitable models ought to be differentiated from those which allow even inconsistent states of affairs to be experienced as conceivable by abstracting the scenario. One needs the means to position the involved entities by visualising them as tangibly continuous alongside grounds for applying the intentional stance (e.g. Dennett, 1987) such as considering possible sources of change. Secondly, one may be resisting the construction of the required hypothetical scenario because of strong realist commitments (Todd, 2009) being imported by default and clashing with parts of the scaffolding which do not fully correspond to observable reality (Mahtani, 2012). Thirdly, one may refuse to re-integrate the possibility expressed by that scenario with one's sense of the real because of the involved non-literal cognitive models used to conceptualise aspects of the situation like a relation as a string-like connection (Szabó Gendler, 2000). The solution to such concerns is being conscious of such tendencies and systematically assessing the involved details. In the case of attributed situations, the involved forms of conceptual metaphors (e.g. Lakoff & Johnson, 1980) are ordinary and no different from various everyday conceptualisations (e.g. movement of time).

Chapter 03: Observers

Observers in the presented sense represent how information from the physical events within a specific accessible domain gets aggregated and formatted until it manifests experientially. Such observers consist of embedded layers of systems which integrate information conveyed to them by structures capable of accessing it based on their sensitivity to specific conditions. Focusing on embedded positions which only get realised experientially in conjunction with the embedding experiencers allows treating the constructed positions embodied in various media, including disembodied perspectives, themselves as kinds of observers with set inputs.

Access consists of positioned structures sensitive to specific immediate states to which they react with some consistency. Together, the forms of sensitivity and the associated coordinates form bounded domains. Such domains include whichever processes central systems interface with to extend such domains to otherwise distal states, such as when light conveys information about distant surfaces.

Systems of integration format and retain the information conveyed to them by such systems of access. Weakly integrating sub-systems format and forward information while strongly integrating systems retain what they access because recursive structures of internal access allow for previously accessed information to be reconsolidated. Even when the perspectives embodied in text cannot be realised without conceiving individuals, they exist as part of the format and the results of engaging with the texts.

3.1 Observer Types

In the preceding chapter, definition 1.2 linked the selection of an attributed situation's constituents to the relations involving such situations' core entities needing to also be observed by some designated observer. Said formalisation presents the relevant observers as systems consisting of embedded layers of integration connected to set points of access through corresponding modes of access. In less technical terms, each observer corresponds to a network of connections conveying information towards a system which structures and retains it. That the thesis does is not satisfied with a more intuitive notion results from the need to concretely represent perspectives which do not correspond directly to the intuitive notion of an observer. Such perspectives include *specific* instances of the view from nowhere (Nagel, 1986) being implemented and other theory-internal constructed positions.

This section provides an overview of the key distinctions between the relevant kinds of observers. These distinctions involve two axes: basic versus constructed observers and positioned versus detached observers. The intuitive notion of an observer as a concrete individual only covers specific kinds of positioned basic observers: real (human) organisms embedded in the world. In contrast, the current model accounts for whether such people use access-extending instruments, as well as for the kinds of positions involved in media with which people may engage (text, video, interfaces, etc.) using embedded layering. As such, this rubric also covers simulated and idealised perspectives. This enables approaching the various perspectives embodied in how texts expressing theories of meaning present their material under a materialist metaphysical framework.

3.1.1 Basic and Constructed Observers

Within the posited framework, how accessible information manifests depends on the details of the corresponding system of integration. All such information concerns material facts – actual, physical structures – as it is reliant on causal interactions but how this information is integrated need not result in strictly congruent representations. In this context, *spaces* are differentiated on such basis: (approximately) congruent

representations constitute a shared space while divergent representations of the same information constitute distinct spaces. For instance, when three people observe the same brains during a surgery, their conscious experience will converge with contingent differences based on focus of attention, eyesight, and position. However, let us assume one of them is the patient who is being fed video of the surgery. For them, the state of their brain also manifests in a distinct manner through internal channels: not as a fatty, protein-infused lump of neurons and glia but a first-personal perspective which is inclusive of but not reducible to their conscious experience of mutual surroundings. The same material structure manifests distinctly based on the forms of access and the format of the system(s) of integration involved.[1] Basic and constructed observers are defined relative to the spaces available to them. A basic observer may access the most encompassing available space while a constructed observer is restricted to a space subordinate to that basic space.

The space a basic observer may access effectively corresponds to what gets treated as *actuality* – a baseline relative to which alternatives are defined. Technically, 'actuality' in this sense is a relative notion. The status of the actual depends on lack of access to more basic spaces. This condition (for any given space treated as actual) is compatible with either the space truly being subordinate to no other or it being a closed system from within which the presence of a more encompassing reality cannot be verified (at the time).[2] For current purposes, the reality manifest in basic human experience is granted this status of being actual for purposes of defining basic observers. Any observer which formats the information it integrates in a manner congruent with the form attributed to corresponding parts of said space qualifies as a basic observer. Due to their neurological similarities, at least all vertebrates ought

[1] Indeed, the shared actuality attributed to the three people is technically a single space wherein whoever was prompted to imagine it is themselves integrating information from the imagined individuals' perspectives. These imagined perspectives are constructed using inference at best rather than facts accessible to the conceiving person. Thus, the result is a mental space distinct from the actuality it represents no matter the degree of convergence between the two.

[2] This is a nod to simulation theorists (e.g. Bostrom, 2003), since it is conceded that actuality itself *could* be but an elaborate model being simulated by some higher order system. However, this theoretical possibility does not otherwise impinge on the discussion on observers.

to qualify, and even some microbes might constitute basic observers in this sense if they *feel* aspects of their environment in a manner grounded in shared physiochemistry.[3] So, in effect, a basic observer is one for which the totality of the spaces it may access cannot be reduced to the components of some more fundamental space. The states of an informationally isolated computer's circuitry capable of sustaining a simulated reality, for instance, would not qualify as the system is but a part of a wider observable reality. The 'may' in this definition refers to the capacity to register such facts independently of contingent position. The definition may be rather technical to account for further possibilities but the prototypical basic observer is any conscious entity which may access its surroundings such as a human person.

Meanwhile, constructed observers are limited to spaces which represent states of affairs embedded in the actual as proper parts in a manner non-congruent with their counterparts in that primary space. The forms of access which underlie such observers are those occurring in actuality rather than any represented directly in the subordinate spaces themselves. In the case of a read fiction, for instance, the text systematically prompts the construction of mental spaces within which the emulated experience of a viewpoint character is reliant on neural connections rather than space-internal processes analogous to actual perception such as the character seeing something. Similarly, the scenery presented on a computer screen while playing an immersive virtual game is integrated based on the states of the computer and therefore represents those actual, physical states in a distinct manner. What defines a constructed observer is how the elements of the space(s) available to one may be mapped onto those present in a more fundamental space. They include those which are implemented neurally based on prompts provided by texts expressing theories of meaning as well. With this formulation, such observers and the spaces they inhabit remain reducible to physical processes.

[3] Damasio (2018, pp. 53–56), for instance, speculates on the nature of microbial existence and whether a limited phenomenology may precede neural systems based on the more basic homeostatic principle of organic systems seeking a state of sustainable equilibrium relative to the conditions of their continued existence.

3.1.2 Positioned and Detached Observers

The other relevant discussion involves whether or not the specified observers are diegetic relative to the space accessible to them – whether they are subject to the same rules as any other entities within the space. As an illustration of the principle, consider a scene on film where two people stand in line, both facing the audience. Viewers who mentally emulate the scene in question as part of understanding it may take on the position of either of the depicted people who are positioned and therefore, for instance, only the person standing behind the other would see their companion. Approaching the situation form the perspective of either of them involves being subject to considerations which are imported (Mahtani, 2012) to the scenario based on its resemblance with reality. In contrast, the camera that provides the audience's primary point of view generally remains a non-entity without a distinct representation within the narrative or corresponding mental space. Unless they are allowed to break the fourth wall, neither person facing the camera would recognise its presence, for instance.[4] This viewpoint consists of the cut compiled using material from *each* recording device on the filming set. Because the presence of the camera can sometimes be recognised, even if such observers are typically transparent, such non-presence is not a defining quality of being a detached observer. The rules to which they are subject being dictated selectively instead of being derived from the general rules within that space allows for either possibility.

In effect, the positioned and detached observers occupying a space are defined relative to the source of the rules applied to them. Positioned observers share a set of rules defining what is possible within the space while each detached observer is subject to an independently specified, idiosyncratic set of rules. In neither case do the rules need to be explicitly stated: they are embodied in the presentation itself. For instance, positioned basic observers are subject to causality-based information

[4] This example has little to do with the set at which a film is shot. The actors obviously see the camera in this scenario unless it is hidden for some reason. Rather, the space of the narrative corresponds to the *mental* spaces audiences construct using the cues the film provides. Within that space, the shown people correspond to their characters rather than the actors, even though the audience may also connect their identities across spaces when they recognise the actor.

transfer and may not access distal facts without a corresponding causal pathway such as the kinetic energy embodying sound reaching the ear. Since they occupy distinct spaces, constructed observers may be positioned even when they are only subject to such rules grounded on actuality in terms of the physical substrate which underlies the space they occupy. If the rules of the constructed space are lenient enough or contain special clauses for exceptional entities, a positioned observer may even have degrees of access encompassing the whole space which is a privilege usually associated with detached perspectives. Lewis (1979b, p. 139), for instance, prompts one to imagine two gods positioned within a shared possible world. Both possess a form of omniscience where they know every true proposition about the possible world they occupy, and one lives atop the tallest mountain while the other lives atop the coldest mountain. Within the rules specified for the space one is prompted to imagine, therefore, even a positioned observer may access every fact independently of their position – as long as they are a god. Yet, there is also the detached perspective from which one imagines the scenario based on Lewis's instructions and presumably, even the two gods are treated as ignorant of it.

The sense in which detached observers are non-diegetic involves them not being subject to the general rules of whichever space they inhabit and instead having their relation to that space be based on individually specified conditions. Such exceptionalism does not *entail* more comprehensive access but it is a common trait associated with the usual roles for detached observers. An omniscient narrator, for instance, is used in place of a positioned perspective to allow the audience access to a perspective from which characters' errors in judgement based on their limited perspective can be made evident, among other things. Similarly, expressing any general explanatory model must view the phenomenon with a degree of abstraction as such models correspond to no specific instances of it. As such, the perspective from which they are presented concerns a constructed space instead of directly applying to actuality. Such constructed spaces' limits are defined by the perspectives from which they are accessed: within them, to exist is to be witnessed. While it might be possible to present such models from a positioned perspective relative to said space, position-

ing a perspective would require specifying how it operates despite doing so providing no obvious benefit. A detached observer position allows the material to just be presented directly – even if such transparency to the audience may hide that the detached perspective remains a *particular* perspective. As is discussed down the line, this perspective ought not to be assumed to be some universal position of objective inquiry, either. Instead of instantiating a singular view from nowhere (Nagel, 1986), each detached observer is constructed individually as part of the process of someone selecting what is presented and what is excluded as part of the worldmaking (Goodman, 1978) for representing a phenomenon or narrative. That selection over what qualifies for inclusion is necessarily involved ought to already prove that the results are not an unfiltered representation of objective reality. However, even when the ideal of aperspectival objectivity is being approximated, the perspectives in question apply to distinct constructed spaces, making them separate. The degree to which they converge around the ideal ought to be assessed by heeding the specifics.

These two axes yield a taxonomy for categorising observers. Three of the four resulting categories are pertinent to the main discussion: (1) positioned basic observers, (2) positioned constructed observers, and (3) detached constructed observers. While the theories themselves introduce various constructed observers, they remain dependent on positioned basic observers – mainly real people – to instantiate these positions in corresponding mental spaces (and the like). The layered model with its multiple stages of integration allows for layers embedded as parts of the input for such basic observers to be isolated as distinct constructed observer positions. Such extraction respects physical monism while providing a concrete means to capture how such perspectives operate as parts of the relevant phenomena such as theories of meaning. In effect, the mental spaces constructed based on the directing prompts provided by external media like texts possess systematic similarities, the extent of which depends in part on the cognitive resources available to differently primed demographics.[5] These relationships between the form in which a theory is expressed

[5] The contributions of cultural evolution are left largely unaddressed but such dynamics are assumed to underlie both the differences and the similarities between demographics' mental models. No

and different people may then be used to characterise the contents of the theory itself in a manner reducible to material facts. Namely, specific material configurations embody features which ground their potential to systematically engender functionally similar neuronal compositions. Both positioned and detached observers are present in theories of meaning, specifically, as they must provide both a link to how meaning manifests to people because of the subject matter and a generic model.[6]

3.2 Access

What underlies the physicalism of the presented notion of observers is its reliance on *access*: the directed flow of physically embodied information. Degree of access specifies the bounded domain within which information is available to a specified observer, and it consists of sets of *modes of access* present in determinate *points of access*. The former define which facts register and the latter where. Both rely on the presence of enabling structures with features discussed below. While this chapter substantiates this aspect of the formal definitions, the subject is also of independent interest because of other potential applications for (parts of) the model.

3.2.1 Modes of Access

Modes of access correspond to the various forms of reactive sensitivity which allow a structure to convey information. They are defined relative to three features these

particular theory is treated as uniquely apt but aspects of epidemiological models (e.g. Sperber, 1996; 2001; 2006), meme theory (e.g. Heylighen, 1999; Heylighen & Chielens, 2009), and dual-inheritance models (e.g. Boyd & Richerson, 1985; 2005; Richerson & Boyd, 2005) each appear to help explain the distribution dynamics of mental and public representations in part.

[6] The sense in which meaning is *anchored* to how it manifests to people merely involves the notion that no matter how divergent the predictions a theory makes or no matter how far-removed the sources of influence a theory postulates might be, these details ought to be related to how people experience meaning. The two need not be equated but because the forms of experiences associated with meaning are necessary for questions concerning meaning to become the object of inquiry, it remains imperative to provide a sense of the relationship between such experiences and what a given theory of meaning claims. For instance, Stalnaker (1999; 2014) employs possible worlds to represent propositional content and contextual information, yet this apparatus which hardly presents itself in experience is intended to explain meaning as it is experienced, including features such as statements considered true sometimes involving counterfactual states of affairs (e.g. 'Had I not hesitated, I would have succeeded.') (Stalnaker, 1970, pp. 32–34).

structures must minimally possess: (1) reactivity, (2) compliance, and (3) accretion. The first two enable conveying information: the structure must react to its surroundings with a degree of consistency. Accretion turns mere conveyance of information to a form of access: what is being conveyed contributes towards an aggregate which manifests it in some format. In effect, when specifiable stimuli engender a systematic reaction which feeds information towards some system of integration, the structure can be attributed corresponding modes of access.

Both reactivity and compliance characterise how a structure behaves in relation to available (and therefore immediate) presences. Being reactive involves the capacity to change in response to such conditions. Reactivity is required because a perfectly static state across all possible conditions fails to differentiate between the conditions and cannot thus act as an *index*[7] signifying any of them. As per Shannon's (1948) conception of information, conveying any information requires reduction in uncertainty concerning which possible state of affairs is being actualised. A non-reactive structure fails to differentiate between such conditions and thus, access to said state cannot reduce uncertainty over which is being actualised. Compliance, in turn, consists of differential degrees of correlation between pairs of inputs and outputs. Lack of compliance corresponds to the state of a structure fluctuating independently from the presented states of affairs, resulting in similar non-differentiation among the states to which the structure does react. Mechanisms may only act to store and convey information when inputs correlate with outputs.[8] Such compliance can be quantified relative to each pairing associated with a structure, and this would yield a distribution of probabilities for the inputs yielding a given output. *Any* correlation suffices to reduce uncertainty and thereby convey *some* information, and this model presents no standardised minimum thresholds. Instead, the extrac-

[7] 'An *Index* is a sign which refers to the Object it denotes by virtue of being really affected by that Object. [...] it is not the mere resemblance of its Object, even in these respects which makes it a sign, but it is the actual modification of it by the Object.' (Peirce, 1955, p. 102, emphasis in original).

[8] 'The mechanism is a mechanism of information storage, because the properties that figure in the content of its output are (to a degree determined by the accuracy of the mechanism) the properties possessed by the objects which are the input to it.' (Evans, 1982, p. 125).

tion of discrete facts occurs during integration based on predictive processing (e.g. Clark, 2016) as discussed in section 3.3.[9]

Neuronal structures help illustrate these principles' contribution to the flow of information in action. If a neuron sensitive to the state of a receptor cell reacts to changes in the latter and changes in the latter correlate systematically with sets of conditions, then the firing of the neuron also carries information on some element of that set having been presented to the receptor. For example, a vanilloid receptor 1 (TRPV1) reacts equally to at least four distinct conditions: temperatures greater than 43˚C, presence of capsaicin or allyl isothiocyanate (AITC), and deviations from neutral pH (Dhaka et al, 2009). Neurons sensitive to the corresponding reaction only convey that the receptor has reacted and thus the information that at least one of these conditions has been presented to it but not *which* condition. Once the information these neurons convey becomes integrated within the central nervous system, a set feeling is produced. Properly speaking, this feeling should thus be considered the feeling of a generic TRPV1 response even if it is primarily associated with heat. What that feeling represents *subjectively* depends on other available information such as the expectations seeing and feeling a chilli pepper enter the mouth generate.

The inclusion of accretion turns this mere flow of information to access. A structure is accretive when the information it expresses is directed towards greater integration. Thus, a structure may only become accretive when it is incorporated in a system wherein there exists an information-retaining pathway between the structure and some system of information integration. Such pathways consist of other

[9] Underlying this model is an adaptation of Dretske's (1981, p. 57) *xerox principle*: 'If *A* carries the information that *B,* and *B* carries the information that *C*, then *A* carries the information that *C*.' However, the current model operates on disjunctive possibilities rather than discrete facts themselves being conveyed in this manner. As Lloyd (1989, p. 43) observes, some simile of this principle is necessary when information must be retained across sub-events. Lloyd (Ibid. pp. 43–48) is critical of Dretske's approach because his epistemological focus requires univocal relations while information tends to be compatible with a set of conditions, threatening even its ability to ground representation. The current approach accepts that at most, information may concern the *possibility* of a state of affairs attaining and resolves the issue of representation by linking the reliability of subjective certainty to objective probabilities within local ecological conditions.

structures which react compliantly to the conditions corresponding to the states of preceding constituents of the pathway. A nerve is but one example of such a pathway, and its proper constituents could be specified with more granularity than the states of individual neurons, given how synaptic and axonal communication works. As the later distinction between primary and extended access illustrates, being accretive is not restricted to such enduring structures, either: when an information-conveying process interfaces with an appropriately sensitive system, its prior stages may be retrospectively redefined as being accretive.[10] Similarly, the retina of an eyeball is *only* accretive when it feeds towards *some* system able to integrate the embodied information in some format, whether a brain or a machine.

3.2.2 Points of Access

Points of access are merely coordinates which correspond to modes of access. Note how modes of access being limited to their immediate surroundings would therefore prevent extending the domain an observer may access to include states of affairs distal to them. The proposed solution involves drawing a distinction between *primary access* and *extended access* to characterise differences between contributing proximal and distal processes. Primary access is linked to stable structures which remain accretive by virtue of their design whereas extended access consists of processes made accretive when they interface with such systems. Because the identity of an observer is defined in terms of the *full* extent of its access, this section therefore tries to clarify how the identity conditions of such observers are inclusive of conditions external to the central systems responsible for primary access. The identity of the observer itself extends to encompass factors like photon trajectories.

Systems of primary access are structures with distinct temporal and modal sustainability relative to a frame of reference. This feature is called stability, and in effect, the more stable a system is, the longer the average span of its modal coun-

[10] For instance, when a photon reaches a photoreceptor linked to a functioning central nervous system, the states defining its trajectory contribute towards distal information such as the texture of a surface being accessed and integrated.

terparts must be.[11] The identity of such a system is not treated as dependent on its particular constituents: the relevant cross-temporal and cross-modal counterparts only require structural continuity of constellations of functionally fungible constituents. This is not a general claim about identity conditions but in *this* sense, insofar as cross-temporal identity may be attributed, changes in fungible constituents do not affect the definitive structural relations. A system's level of stability would thus be defined as the average span of those counterparts which share initial matching states defined in terms of structural relations. In practice, the systems responsible for primary access would thus include the parts of everyday objects which enable information to be transferred towards integration: neuronal subsystems connected to sensory receptors, circuitry from input devices, and so forth. One need not designate the whole person. Since the frame of reference is not set, however, systems exceeding such cases or sub-systems are also applicable. When a whole planet is put in focus, if some species have generated information-integrating loci where relatively interchangeable actors provide relatively stable inputs to relatively stable integrating systems, such processes constitute primary access for a form of observer defined relative to the collective.

However, the formal identities grounded in definition 1.2 must differentiate between observers at a level of granularity greater than such primary systems alone allow. Specifying clearly bounded domains in this manner also reveals the limitations of the constructed observers theories of meaning incorporate: the selectiveness of the detached observer and the difference between ideal and actual processors of meaning. The inclusion of extended access helps define such domains. A system of primary access interfacing with compatible information-bearing processes external to it makes such processes accretive and therefore, institutive of modes of access. One necessary concession to enable this is framing events as four-dimensional struc-

[11] Modality is invoked to avoid incidentally prolonged conditions becoming treated as parts of a primary system. For instance, one may imagine a person staring at a wall. Unless they are bound, regardless of how long the actual staring takes, this configuration is not stable since it can be broken by the person breaking eye contact. Similarly, incidental termination only has limited effect on such averages if the system is otherwise self-sustaining.

tures where prior states of involved processes inform their subsequent stages. A photon's trajectory, for instance, would constitute such a structure where its state at any stage is sensitive to its state at the preceding stage, and each embodies information on its prior position and direction as a result. This is a matter of framing for restricted purposes rather than a metaphysical thesis. The result is being able to treat such processes as pathways for information which is hardly controversial, given how momentary states are compatible with limited preceding states, resulting in reduced uncertainty when they are in turn accessed.

The interfaces between primary access systems and their extensions which enable extended access can be characterised as (access-related) affordances.[12] These systems have evolved to tap the myriad of naturally information-bearing processes which are uniform enough to be associated with predictable conditions. Such processes include trajectories of photons, diffusion of chemicals, and vibrations across mediums. When an interface is formed, these information-bearing processes external to the primary system become accretive and therefore fulfil the conditions for access. As such, the model may accommodate the direct realist intuition that people perceive the world rather than a representation of it (e.g. McDowell, 1994, p. 26). One has *access* not only to their immediate surroundings and internal states (e.g. Clark, 2016, pp. 15–16) but also to the distal states which define experience. Access alone does not suffice for most epistemic purposes, though, as the next section illustrates. However, this model of extended access allows the whole process of observation to be characterised as a continuous, singular process where *each* relevant process is reduced to access alongside integration. In contrast, more intuitive notions tend to starkly differentiate between internal and external forms of access – cognition and perception – and model each around familiar forms such as unvoiced speech and sight. The benefit of this model in comparison lies in its recognition of the continuity between these processes and its generality. As such, the model allows highlighting how information transfer as part of internal processes has multiply realisable rather

[12] As a reminder, an affordance is 'an opportunity for use or interaction which some object or state of affairs presents to a certain kind of agent' (Clark, 1997, p. 172).

than essential conditions similarly to how perception can be deceived, and it can be extended to systems of observation distinct from humans and other mammals.

3.3 Integration

Here, integration is defined as the input from multiple channels of access being algorithmically parsed into a unified format. The process must be algorithmic[13] to avoid invoking higher-order intentionality in explaining the nature of its results.[14] When observers are defined using embedded layers of integration where each formats the input from set points of access, the model accommodates analysing both sub-personal observers like positions relative to mental spaces and higher order observers which use individual perspectives as inputs. The former option matters for purposes of explaining the sense in which theories of meaning incorporate standardised observers without postulating dubious existences. The latter helps explain how a sense of objectivity may arise from objectifying one's usual perspective as one among many which one may conceive relative to a state of affairs. In so doing, one appears to assume a detached position with multiple embedded positioned observers, including one (or more) with which one personally identifies. This section discusses the nature of such integration and its role relative to manifest experience.

3.3.1 Weak Integration

One brief distinction to made among such algorithmic processes of integration lies between the types dubbed *weak integration* and *strong integration*, respectively. It draws attention to how technologies such as scientific apparatuses modelling subaromic particle behaviour or even cameras are not *transparent*: they also format in-

[13] An algorithmic merely obeys a set of rules reducible to univocal input-output pairs. In this context, it involves being explicable based solely on the structural features of a system. Dennett (1995, pp. 52–60) deems all such processes algorithmic in this sense (Ibid. 57).

[14] Either the relevant procedures are reducible to sets of algorithms or they are not. If they are not, then they are either irreducible or reducible to non-algorithmic processes. Treating the procedures as irreducible is a non-explanation. Non-algorithmic processes would either have indeterminate relations between inputs and outputs or involve arbitration. The former option is another non-explanation while the latter is dependent on capacities which presuppose the system itself in terms of evolutionary priority. By process of elimination, only algorithmic processing is viable.

formation in a manner not inherent in the input accessible to them. While such systems do not *self-modulate* and therefore, do not strictly integrate information in the strong sense (e.g. Tononi, 2004; Damasio, 2018), they do incorporate information in set formats and help relay access over distance and duration. The main difference, therefore, is how the entities made manifest in their format are only accessible externally due to lack of recursive structures.

Consider the alternative. Walton (1984) treats photographs as transparent in the sense that whatever they depict is itself being seen when the photograph is viewed.[15] While in this view, the seen photographs are not '*duplicates* or *doubles* or *reproductions* of objects, or *substitutes* or *surrogates* for them' (Ibid. p. 252, emphasis in original), they are still treated *solely* as relays. In effect, Walton – alongside other philosophers of photography emphasising the continuity between the object and the image (e.g. Cohen & Meskin, 2004) – appears to consider the *form* of the produced images *inherited* from their objects. According to such a view, what is depicted already seems to be present in the input. Despite the extremity of Walton's position that the depicted objects *themselves* are seen when a photograph of them is being viewed,[16] the notion that unedited photographs depict things as they appear should appear intuitive enough. Yet, this is the position being subverted since treating such systems and their products as forms of integration involves attributing characteristic formats of parsing to each.

The issue is ultimately simple: photographs *irretrievably* transform their input. The most important evidence comes from considering the four-dimensionality of photographic input. While the technology has advanced, making exposure times *effectively* instantaneous, the full input does not arrive in a single, continuous wave of photons. Rather, successive interactions with a slice from a *stream* of photons ground an image. This input resembles Michael Murphy's 2015 sculpture 'Perceptual

[15] 'Photographs are *transparent*. We see the world *through* them. [...] the viewer of a photograph sees, literally, the scene that was photographed.' (Walton, 1984, pp. 251–252, emphasis in original).

[16] Costello and Phillips (2009) provide an overview of the state of philosophy of photography and Walton's relation to the other positions on the epistemic questions photographs present.

Shift'[17] – the stream only matches the image relative to an axis orthogonal to the surface. Additionally, the granularity of an image ensures that each functional unit such as a pixel is compatible with multiple inputs without differentiating between them since minuscule differences between arrival *positions* do not register. That a photograph manages to regardless provide a satisfactory representation of a scene should draw attention to the similarities in the ways both it and human visual processing are forced to accommodate the physical facts. In *both* instances, integration occurs. The camera integrates inputs over a set period and formats them accordingly. Because it is designed to *mimic* the corresponding scenes visible to humans from the same positions, this results in a semblance of transparency. However, since a transformation occurs and neither the order of arrival nor the exact position of inputs may be retrieved from the image, this transparency is an illusion.[18]

3.3.2 Strong Integration

The alternative, *strong integration*, corresponds to what Tononi (2004) just calls integration. Its defining characteristic is the produced states being causally interdependent: local changes ripple through the network until a new equilibrium or other stable pattern emerges. Tononi (2004) describes the underlying dynamic as shared effective information within a complex being greater than nil.[19] The quantity of such effective information within a system defines the degree to which it integrates information.

[17] 'Perceptual Shift' consists of 1252 wooden balls of various sizes painted black and hung from the ceiling using subtle fibres. When viewed against a white wall from a certain angle, the balls produce a halftone image of an eye. Viewing them from any other angle reveals how the balls are set along a third dimension – depth – to produce the two-dimensional image.

[18] While the above discussion only addresses the example of photography, the reasoning appears generalisable to other media such as voice recordings or video. For instance, *fidelity* is a factor on which recording and playback devices are assessed. In practice, most systems introduce some change but even the most fidelitous medium could be expected to bottleneck the recorded soundscape as the positioning of the playback devices replaces that of the sources. Thus, while sound is more of a continuous medium and therefore does not share the problem with input being flattened or coarsened, the *directedness* of its elements (echoes, etc.) would at least require very specific setups to be transparently emulated.

[19] '[A] subset S of elements cannot integrate any information (as a subset) if there is a way to partition S in two parts A and B such that EI(A⇋B) = 0 [...] In such a case, in fact, we would clearly be dealing with at least two causally independent subsets, rather than with a single, integrated subset.' (Tononi, 2004, section 2, paragraph 15)

Complexes are units for the strong integration of information: systems where each symmetrical combination of elements embodies a non-zero amount of effective information and the total effective information of the whole exceeds any combination of its parts.[20] *Effective information* between parts of a system consists of the mutual information between the maximum possible output of entropy by one part and the entropy of another. This value expresses the potential dependence of the latter's states on those of the former, and the definition makes the methodological assumption that any change in the dependent half for a given calculation could be influenced by the other half. However, since complexes are defined symmetrically, any external influences should be mitigated. Finally, *mutual information* between two parts is the combined (Shannon) entropy of the two parts from whence the entropy of the system encompassing both is deducted.[21] In effect, it expresses how much information knowing only one entity's state conveys about the state of the other.

While Tononi focuses on information embodied in *contemporaneous* states of constitutive elements such as neuronal nodes, for current purposes, effective information only acts as *evidence* for strong integration.[22] The defining quality it expresses

[20] '[T]o establish which subsets are actually capable of integrating information, and how much of it […] we consider every possible subset S of m elements out of the n elements of a system, starting with subsets of two elements (m = 2) and ending with a subset corresponding to the entire system (m = n). For each of them, we measure the value of Φ, and rank them from highest to lowest. Finally, we discard all those subsets that are included in larger subsets having higher Φ (since they are merely parts of a larger whole). What we are left with are *complexes* – individual entities that can integrate information. Specifically, a *complex* is a subset S having Φ>0 that is not included within a larger subset having higher Φ.' (Tononi, 2004, section 2, paragraph 16, emphasis in original). In the notation, Φ denotes the minimum information bipartition between pairs of elements within a set and thus corresponds to the degree of (strong) information integration the total set can be attributed (Ibid. section 2, paragraph 15).

[21] 'One way is to divide S into two complementary parts A and B, and evaluate the responses of B that can be caused by all possible inputs originating from A. […] In information-theoretical terms, we give maximum entropy to the outputs from A (A^{Hmax}), i.e. we substitute its elements with independent noise sources, and we determine the entropy of the responses of B that can be induced by inputs from A. Specifically, we define the effective information between A and B as $EI(A \rightarrow B) = MI(A^{Hmax};B)$. Here MI(A;B) = H(A) + H(B) - H(AB) stands for mutual information, a measure of the entropy or information shared between a source (A) and a target (B).' (Tononi, 2004, section 2, paragraph 14)

[22] Correlated states are unsatisfactory because focusing on correlation eschews the temporal delay which interaction involves. It is possible for parts of a system to be participating in integration de-

is the involved components being causally intertwined and therefore, the presence of pathways which enable interactions in either direction. Strong integration occurs whenever the states of the elements of an information-organising system are causally *interconnected* – whenever changes in the state of one at least potentially influence the states of other parts of the system. It is absent when parts of the system may be modified without other parts changing materially. Effective information between parts of a system therefore becomes a measure of such interconnectedness. The linked notion of complexes still matters since it helps express how and why observers may be defined with a strongly integrating system acting as the terminus. The constant modulation between the parts of such a system makes it continuously *present* its state to itself. This feature in turn enables relatively stable retention of access and therefore, formats involving manifest *identity* for involved entities.

Unlike a weakly integrating system which only presents outward for lack of self-modulation, a complex involves bidirectional flow of information. Enabling such symmetry requires recursive structures.[23] The delay which results from information traveling in this looped structure allows information to be retained because parts can be *reminded* of their prior states: the resulting states of subsequent parts of the system which it registers later also embody information about said prior states. Money lending provides a parallel: when the money is returned, the lender is reminded of the arrangement. As a result, any information accessed by the system is to an extent present in the state of the whole system through still affected local states which continue to engender appropriate reactions. Ideally, the system is then able to reconsolidate the information present in it by replicating functional approximations of the states which were originally associated with specific information.

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spite their contemporaneous states being uncorrelated. However, inputs having various semi-constants (e.g. presence of approximate generic shapes and colour constants) help synchronise the results in practice much of the time since they help the same states recur across this delay.

[23] Recursive *structures* are distinct from recursive *functions* (e.g. Hauser et al, 2002) and need not involve any even in a cognitive context. References to recursivity are ambiguous (Mota, 2017) (e.g. embedment in homomorphous structures, specifying values based on prior values, self-reference) but in this context, such structures ground *loops* of interaction.

Such retainment makes the corresponding domain of access co-present to the system for purposes of integration which has the crucial effect of enabling it to establish relations of identity across instances. Despite differences in terms of terminology and purpose, similar reasons are associated with neuronal recursion possibly enabling symbolic representation (e.g. Pulvermüller, 2002; Bickerton, 2003).[24] Namely, the rate of neuronal decay and its parallels in other systems enable configurations where parts are sensitive to the co-occurrence of different parts' states associated with temporally distinct reactions to functionally equivalent stimuli. Establishing identity, specifically, requires cross-temporal (or -modal) information.[25] While *sameness* can be grounded in similarity or continuity across a momentary input, *self-sameness* appears dependent on relating such instances across other dimensions. Illustrating as much takes imagining an arbitrary static image. Whatever identities would be attributed to its constituents appear liable to be *overruled* based on their behaviour if the scene were to move. If, for instance, camouflaged insects were part of the scene, what was initially treated as parts of plants or terrain would receive independent attributed identity.

3.3.3 Integration and Manifest Experience

As presented, access may only provide statistical information (Shannon, 1948) which may never correspond with a singular, definite content without having been restricted to a limited set of possible results.[26] As a result, the state of any access-enabling

[24] 'The brain is adept at merging series of discrete inputs into coherent wholes (it does this every time you look at anything), and it can keep track of the sequence of its own operations through the gradualness with which neuronal activity decays […] All that is needed to run [a system with syntax] is a far higher number of neurons and more of both cortico-cortical and cortico-cerebellar connections than we find in the brains of other primates.' (Bickerton, 2003, p. 90).

[25] Forms of weak integration with temporal dimensions do not qualify. A record such as a long-exposure photograph which integrates information across a period does not differentiate between moments of exposure. Records of extended periods which have a temporal dimension themselves such as video or audio records also merely provide a *series* of such products which manifest as a whole once they're accessed by a system capable of cross-temporal integration.

[26] 'These semantic aspects of communication are irrelevant to the engineering problem. The significant aspect is that the actual message is one *selected from a set* of possible messages. The system must be designed to operate for each possible selection, not just the one which will actually be chosen since this is unknown at the time of design. / If the number of messages in the

structure objectively conveys the possibility of every compatible preceding state of affairs. By itself, a signal does not differentiate between chemical imbalances among neurons and an externally induced stimulus. Such statistical information underdetermines the definite, source-oriented, and largely truthful contents of experience, in other words. For the model to be minimally viable, therefore, this disparity must be overcome. The proposed solution is to account for evolutionary concerns as a factor in the priming of the system's available baseline information relative to which further input is formatted. The details an organism-based observer extracts based on evolutionary priorities involve wellbeing-related interactions with its environment.[27] The relative invariance of such conditions over evolutionary history optimises adapted systems for this set of conditions. In effect, then, such systems are informed by millennia of precedent, resulting in their success rate under congruent enough later conditions.[28]

Experience being definite may appear a given but in principle, the notion of a being experiencing a set of integrated possibilities is not inconceivable. Reality could, for instance, manifest as a set of overlapped phantom states of affairs to such an entity, with each such possibility's salience being correlated with its approximate probability given accessed information. If such an entity is conceivable, one may then ask what factors have made experience definite. *Epistemically*, the alternative seems preferable: recognising each possibility extends available knowledge, and the entity could directly consolidate its sense of the real through falsifying action directed at

set is finite then this number or any monotonic function of this number can be regarded as a measure of the information produced when one message is chosen from the set, all choices being equally likely.' (Shannon, 1948, p. 379, emphasis in original)

[27] '[Predictive processing] […] results in the creation and deployment of what Cisek and Kalaska (2011) called "pragmatic" representations: representations tailored to the production of good online control rather than aiming for rich mirroring of an action-independent world. Those representations simultaneously serve epistemic functions, sampling the world in ways designed to test our hypotheses and to yield better information for the control of action itself.' (Clark, 2016, p. 251)

[28] The separate issue of explaining why information integration should result in phenomenal consciousness is not addressed here. However, Tononi (Tononi et al, 2016) argues that the information integration theory of consciousness on which the presented model is partially based suffices to answer this hard problem of consciousness.

manifest possibilities. Assuming a suitable degree of cognitive capacity, it would be akin to a scientist who may directly observe each hypothesis compatible with the data. If the alternative is epistemically preferable, experience being definite instead cannot rely solely on epistemic considerations. Minimally, it would be a compromise – perhaps a temporary solution afforded by the current stage of development towards ideal realisations. However, the process of evolution is only sensitive to differential rates of propagation between available variants. In turn, rate of propagation is analysable into probability of opportunities, reliability of replication, and persistence. The average number of opportunities depends on their frequency over the available span of time, and success at propagation requires a degree of fidelity between the product and the original. Epistemic proficiency is a means towards these ends from *that* perspective,[29] and evolution is the guiding principle of orgasnims' inter-generational development. Thus, if having accessed information manifest as definite experience provides the greater edge in these respects, such factors would possess greater explanatory power towards accommodating the fact that experience is definite. Alternative explanations such as a contingent lack of suitable mutations cannot be disproven but their reliance on incidental factors weakens them.

Since the realities of life involve finite windows of opportunity and energy reserves, one must consider the relative processing effort and effects on decision-making between definite and modally inclusive formats for available information. Because the former would be embedded as part of the latter as it corresponds to one among many possibilities, given similar fidelity, cross-modal processing is inherently more strenuous. This increased effort involves both time and energy consumption, including individuals needing to develop the necessary parallel structures. Hence, modally inclusive experience has a higher associated cost to be recuperated and yet, its epistemic benefits appear to provide diminishing returns relative to survival rate. After all, should the function which sense modalities evolve to fulfil be regulating externally induced effects on internal homeostasis (Damasio, 2018, pp. 24–26, 49–

[29] '[H]ere-and-now behaviour is enabled by using sensing [...] as a channel to enable the organism to co-ordinate its behaviours with select aspects of this distal environment.' (Clark, 2016, p. 190)

51), they need only direct relations with entities which afford manageable effects on wellbeing. Evolutionarily, only such results have any impact. Focusing on the available threats over opportunities, time is of the essence. One must be able to react in a directed manner as early as possible. In this respect, the lower processing effort of definite representations is vital. Indeed, the clutter of a modally inclusive phenomenology risks decision paralysis or distractions through reduced relative salience of evolutionarily possibilities with high expected value (e.g. predators' outlines). Given how reliably the produced definite experience suffices for directing evolutionarily relevant behaviour, the added epistemic value of alternatives cannot exceed the costs under the circumstances. Similar considerations apply to experience being source-oriented rather than pathway-inclusive. There is no means to monitor the source of such states independently of a secondary channel. Thus, if the pathway developed to inform the organism of evolutionarily significant conditions – whether external or internal – any part being in the corresponding state would become integrated as expressing the associated condition. Awareness of the states of the pathway would help understand its functioning but such information is evolutionarily worthless because it would merely *accompany* other information without further differentiating between states. If the signal were a sign, such information would just complicate the signifier for the same signified.[30]

The accuracy with which states of affairs grounded in the actual are picked among the alternatives relies on environmental constants across evolutionary history. How sensory input is formatted is accurate relative to a set of conditions rather than innately. On Earth, such factors include the distribution of liquids, solids, and

[30] Calling experience source-oriented is technically misleading because such sources are only defined relative to the evolutionarily significant categories. The processes themselves are continuous. The light responsible for vision does not originate with objects refracting it. However, different stages afford information relative to different baselines. Dretske (1979, pp. 110–111), for instance, comments on how light technically embodies information about the chemical constitution of the originating star even if none may extract such information in absence of corresponding prior knowledge. With expert training based on accumulated scientific studies, such capacity might be attainable but evolutionary environments only afford enough information for more limited capacities to extract information concerning refracting surfaces and subsequent mediums.

gases and affordances associated with each given the properties of carbohydrate-based life as well as the availability of light, orientations and textures of surfaces, and distortion incurred by common mediums such as air. Just consider cases where such conditions are not unambiguous but where set circumstances objectively dominate the evolutionary environment such as the difference between an Ames room and usually angled spaces.[31] That distance can be parsed relative to horizontal lines is partly a feature of the environment of a globe with its vanishing points. The information that the room is organised diagonally is one possibility the information presents – after all, it is the truth. The relevant illusions are notably not pathological or dependent on the fidelity of the senses. That the system of integration regardless defaults to the prevailing *norm* ought to hint at its dependence on extrapolation – a dependence which suffices under most standard conditions because the precedent has been established over evolutionary history. Had said evolution occurred within a space defined by alternative geometry (e.g. the concave internal surface of a sphere) and physiochemical distribution (e.g. primarily semi-translucent semisolids), the possibilities being accounted for should be expected to differ. For instance, sense of distance might be tied to colour-filtering where saturation and shifts in hues register as a sign of the thickness and number of separating semi-translucent layers.

Overall, how experience appears to capture something real is best explained by the system responsible having adapted to the specific environmental affordances which have remained largely invariant throughout the process of evolution. Formats which serve environments different from those available on Earth – such as pervasive semi-translucent media instead of opaque surfaces – were shown to be conceivable above. If the principle that formats for structuring experience are subject to environmental influences applies to some conditions, it ought to also apply to life on Earth. However, such results can at best be ambiguous as the information being formatted

[31] An Ames room is a construction intended to be approached from a set viewpoint, relative to which its diagonal angles are orthogonal. This causes issues with depth perception because from said angle, movement along a diagonal axis aligned with the false horizon appears to follow an equidistant orthogonal path. As a result, objects appear to shrink and grow along this path relative to said frame of reference.

is always compatible with multiple possible states of affairs. The system responsible for definite experiences cannot rely on deduction as disconfirming the additional possibilities would itself require definitive information of the sort which would only be deducible if the possibility of all alternative scenarios was disconfirmed. Not only is this requirement circular – as people's susceptibility to illusions demonstrates, the method by which experience is derived must be fallible. Assuming that the precedent set by ecological invariants has guided the evolution of observational capacities provides the means to explain why the system succeeds under most conditions but fails in niche or evolutionarily irrelevant circumstances, yielding illusions instead. Instead of engendering the richest possible representations afforded by the data – such as a sense of all the compatible scenarios – the system responsible for the format of experience only accommodates evolutionary needs. While extrapolating definite scenarios from statistical information reliably requires vast background data, the conditions associated with evolutionary history provide exactly that, embodied in the structure of the relevant systems.

3.4 Takeaway

This chapter substantiated the formal model of observers presented as part of definition 1.2 for attributed situations. The model is adapted for representing the role of observers as part of theories of meaning in the next chapter, but the components presented here remain. This characterisation provides a sustainable foundation for understanding how such seemingly abstract entities fit within a materialist approach. The format of media like text is tailored to prompt people to construct structurally similar mental spaces where the exact degree of correspondence between them relies on the degree of shared cognitive models. Such mental spaces are presented relative to an implicit perspective which may only register what is provided but may then be incorporated into the wider perspective of the individual in question. The degree of access an observer possesses specifies what information is available to them based on the presence of causal pathways feeding into the system. Layered systems of integration explain how that information transforms into experience.

The provided taxonomy of different types of observers provides a framework for differentiating between the kinds of observers involved in theories of meaning becoming conceived based on presented prompts. One can distinguish between basic and constructed observers based on whether the format in which information manifests to them corresponds to actuality or not. All information transfer occurs in actuality but for constructed observers, it manifests in a distinct manner. Just consider the difference between viewing a DVD under a microscope or using an appropriate reader and monitor. Both methods convey the same information about the states of the disc but manifest very differently. Basic observers are necessary as the final layer of integration but one may also analyse the various constructed observers that can be embedded in such systems separately. Among such constructed observers, there are both positioned perspectives analogous to basic observers and detached perspectives. The main difference between the two appears to be whether the observer is treated as subject to a general set of rules or an individually specified ruleset. However, in practice, a detached observer tends to be a transparent lens through which material is presented without any reference to its presence whereas a positioned observer like a first-person narrator is explicitly recognised as such. Theories of meaning incorporate both types: the constructed but positioned perspective of the ideal processor of meaning, and the constructed detached perspective relative to which the theoretical model as a whole is presented.

The important thing about access is how it is always conveyed by physical processes through causal interaction and how feeding towards a system of integration makes any such processes access-defining. As a result, the full domain of access for any given observer is not inclusive of only what is immediately present to them but also incidental external processes with which the central system interfaces and past states of affairs which they can recall, for instance. Additionally, even constructed observers rely on underlying causal processes and often a degree of access related to preceding facts can be attributed to them (e.g. a non-fiction book formats information from observations related to its subject matter). This model simplifies the various forms of processes into a unified functional description which allows different

forms of available and presented information to be formalised under a framework that defines a bounded overall domain: points of access linked to sets of modes of access which each represent a degree of sensitivity to some immediate condition.

Linking access to embedded layers of integration allows the role of various sub-systems to be highlighted individually. For instance, a photo conveys information in a specific manner which integrates details selectively around a format which is suited for people to extract that information and form a corresponding impression about the depicted situation. A dog may see the same contents but it will not make such inferences and a blind person will be unable to interface with the image in the intended manner. In the case of theories of meaning, the observer positions involved are being instantiated by a sub-system of the brain of whoever is actively modelling the contents of the theory by conceiving the presented scenario as they understand it. When the cognitive models used for such reconstructions are sufficiently similar – and especially when they are derived from functionally interchangeable sources or sources with shared origins – the results can be generalised to represent how people of the associated demographics typically conceive the theory's contents. When combined with the model of access, this model of integration allows representing both basic and constructed observers as well as the relationship between the two under a shared materialist framework.

Chapter 04: Conceived Content

This chapter adapts the schema inherent in the proposed model for attributed situations as a framing device for how the contents of theories of meaning are conceived. To this end, one must identify the shared structure between the two and map elements across the two accordingly. In effect, theories of meaning centre around their designated signifiers – the entities which instantiate the form of meaning being posited. The representations of such central entities are surrounded by the theory-specific sets of relations treated as definitive of applicable influences on the meanings of such entities. An idealised processor represents how such meaning manifests, linking the theory to experience (whether or not the two converge), and in conceiving all this, one relies on a detached perspective the viewpoint from which it is all presented provides.

Representing the range of ways in which theories become conceived involves identifying demographics where members paraphrase the contents of the theory similarly. Once such a demographic has been found, one lists potential influences on their conceptions typical of the demographic in question (e.g. cultural capital). The idealised representation of how members of that group would typically conceive the contents of a theory is reconstructed by considering the cognitive models which the text would prompt under only this selection of influences. While the results correspond to no particular person's conception, they represent affordances present in the text and realised relative to set conditions.

4.1 Schematic Overlap

Framing the contents of theories of meaning using the template derived from how situations are attributed requires mapping the correspondences between the two. To be clear, doing so *imposes* the schema onto the shared elements of theories of meaning. It is not being argued that people already conceive of theories of meaning in terms of attributed situations. However, there appear to be common structures between the two which is an aspect of theories of meaning being *highlighted* by their content being framed around this shared schema. The purpose of this mapping is to ground a cognitive metaphor between the two, with the presented notion of attributed situations as the source and a generic model for theories of meaning. Aspects of the more abstract domain are being characterised in terms of the relatively more concrete notion as a means of helping conceive *those* features of theories of meaning.[1] With the connection established, it ought to then become possible to derive blends (Fauconnier & Turner, 2002) wherein familiar theories are approached accordingly, with the framework allowing their scale to be compressed in a manner where effects on instantiator identity and the presence of scope become evident.[2]

There are three key loci for this task. The pairs of matching components consist of (1) core entity and instantiator, (2) definitive relations and meaning-en-

[1] As Lakoff and Johnson (1980, p. 59, emphasis in original) state, 'we typically conceptualize the nonphysical *in terms of* the physical – that is, we conceptualize the less clearly delineated in terms of the more clearly delineated.' While the exact formulation for the notion of attributed situations and some of the instances it allows for might not be instantly intuitive, something being situated is more directly familiar in terms of experiences than general explanatory models of meaning. Such transfer being non-encompassing is necessary, as well: 'It is important to see that the metaphorical structuring involved here is partial, not total. If it were total, one concept would actually *be* the other, not merely understood in terms of it.' (Ibid. pp. 12–13, emphasis in original).

[2] Such compression seeks to reduce phenomena to a human scale where familiar models apply. This scale allows engaging with the total in a manner which is fully representational of *these* aspects of it rather than quotational or otherwise semi-propositional (Sperber, 1985, pp. 51–53) in the manner problematised in section 2.2.2. As Fauconnier and Turner (2002, pp. 323–324) state: 'The human scale is the level at which it is natural for us to have the impression that we have direct, reliable, and comprehensive understanding. This is why achieving a blend at human scale will induce the feeling of global insight. The compression and scale of the blend make it cognitively more tractable to deal with, more manipulable, and since it is tied to the complex network, its manipulation gives mastery of a diffuse network, which gives a feeling of global mastery and insight.' Such impressions *may* mislead, but such scale is also needed to derived a justified sense of insight.

dowing relations, and (3) respective observers. The schema embodied in the shared structure between the cases involves an enclosed structure wherein a designated central entity connects to every entity involved in the relations recognised from an observer's perspective. This section outlines the associated structures within theories of meaning to motivate the reframing of theories' contents using the template.

4.1.1 Central Entities

For theories of meaning – understood as models of the principles based on which members of a type of entity are treated as meaningful – the central entity involved in each key relation is the kind to which the theory attributes the form of meaning it posits. Most theories refer to said entities using terms such as 'word' or 'utterance'. The default position on the (material) identity of such entities is what Hawthorne and Lepore (2011, p. 482) dub *sloppy realism*. The central cases are considered intuitively recognisable and any borderline cases as eliminable given a proper theory of vagueness and how to resolve it. It is proposed here that these instantiators' identities are more interesting than that. However, no alternative general model of word identity and the like (e.g. Kaplan, 1990; 2011) is being presented. Instead, the question being asked is whether the identities of the named entities are determined in part by the rest of the theory within which they occur. Since the entity must be able to participate in the kinds of relations argued to bestow its meaning, its material identity must afford such positioning.

To illustrate this principle, imagine if any reference to the entities supposed to instantiate the sort of meaning under discussion was replaced with an open variable. Instead of 'word meaning', a theory would be addressing 'meaning of *x*'. The task is to determine what constitutes *x* given claims concerning it – namely, in this context, how such things acquire their meanings.[3] While the data a theory provides in this respect might not suffice to specify *exact* identity conditions, claims which

[3] The choice of term for *x* – such as 'word' – is included in this evidence but it is not treated as fully definitive of the matter. Instead, this choice of term provides properties which can uncontroversially be attributed to such entities such as '*x* is primarily associated with correlated pairs of written and pronounced patterns' when *x* is referred to as 'word'.

entail that *x* must have certain properties are inevitable. A cognitivist theory according to which the relations definitive of meaning occur between an external condition and some internal state, for instance, seems obliged to treat the whole minimally meaningful external state as the instantiator. If the relevant relations apply to scenes, for instance, a manifest linguistic token isolated from this degree of context would not qualify. Instead, the proper instantiators would be the distinct scenes inclusive of some linguistic token. Scenes not inclusive of linguistic tokens would similarly not qualify. Thus, the linguistic token itself would be necessary but not sufficient and instead, only the pair of a token and set of minimal contextual conditions would signify under such conditions and therefore act as the proper instantiator. Depending on the minimal context, not all instances of a token might qualify, either. For instance, one may imagine how theories requiring (seeming) intentional production (e.g. Sperber & Wilson, 1995) of the token might disqualify incidental instances such as computer static generating a sound similar to words.[4]

4.1.2 Definitive Relations

Both attributed situations and theories of meaning involve sets of relations relative to which the involved entities are specified. These relations are called the set of definitive relations. For attributed situations, they are the set of relations which involve the core entity and which the observer may access. For theories of meaning, these relations are those responsible for conferring meaning within a given theory. For instance, expert specialists might be granted the power to define proper meaning to which others would implicitly be deferring whenever they apply a term (e.g. Putnam, 1975, pp. 13–14). The relations definitive of meaning for such a theory would include the experts' perception of the phenomenon, their dubbing of it or overhaul of a prior term's definition, and the result being deferentially designated whenever

[4] For a particular example, consider Jenna Sutela's 2017 art piece *Gut-Machine Poetry* which translates the behaviour of bacteria in fermenting kombucha tea into speech-adjacent sound patterns. Should a produced sound correspond to a word, its source would reasonably be insufficient to ground *communicative* meaning even if this token might be experienced as meaningful in a different sense.

the term is used. Similarly to the relations which define the constituents of an attributed situation, such relations are centred on the aforementioned central entity. Whatever instantiates meaning is subject to the totality of the relations which define said meaning, and these relations define the niche available for such entities to inhabit. Additionally, these relations are equally subject to the exact selection being available to an observer. In the case of theories of meaning, said observer is constituted by the idealised perspectives relative to which the resulting meaning manifests, and such constructs can be non-encompassing in various ways. No perspective constructed using the available resources replicates the full complexity of the world, after all. Any simplification presumes its own justification in terms of the model being sufficiently inclusive and eschews some potential contributors.

Exact layouts of relations are only produced when a theory is applied but the same schematic structure can also be attributed to the generic model. Such arrangements result from meaning-attributions having set targets and being dependent on select (types of) relations. Even posited innate meaning is relation-dependent since potential sources include the instantiator's relations with its own properties. In diagrams of such schemata, such entities would be designated using functional roles like 'expert' but the central position of the instantiator ensures that the related connections would settle in this arrangement around it in each instance. When the theory is applied, the associated roles are merely mapped to suitably positioned entities.

4.1.3 Observation

Finally, there is the role of the observer. In this respect, theories of meaning deviate slightly from attributed situations because they incorporate multiple observers. As is discussed below, theories of meaning must inherently accommodate both the positions of generic processors of meaning and the detached perspective of the analyst. However, using the layered model being proposed, this arrangement can be treated as merely a more complex observer. Within the arrangement, the processors' perspective is embedded as a part of the more encompassing position relative to which the whole is presented. Just like the constituents of an attributed situation depend

on which relations involving the central entity are recognised by the relevant observer, what becomes included in how the contents of a theory are conceived depends on what the presentation makes available relative to the perspective provided to those studying it. Since the presentation is invariant, this position may be analysed as part of the theory in the form it is conceived based on the associated corpus.

This inclusion of an observer as a necessary part of theories of meaning is part of the specific perspective being taken on the nature of said theories where the range of possible conceptions prompted by select texts is treated as an aspect of what constitutes such a theory. The observers theories are said to incorporate represent the positions audiences assume in conceiving the contents of theoretical models based on how they are presented. The focus thus lies on analysing the relatively invariant conceptions people form based on the details of designated textual materials using the cognitive resources available for the task. Importantly, this perspective need not be treated as authoritative on some *true* nature of theories. The thesis is uninterested in privileging set approaches and the intent is to merely present a worthwhile, non-exclusionary alternative approach for relating to theories.

The inclusion of theory-specific observers helps specify the scope being implemented by the expression of a given theory – the extent of recognised considerations along various available axes. The effects of such bounded domains can be analysed without needing to posit principles to explain why the theory should only account for the included considerations. Once the pattern has been approached in this manner, such principles can be presented if they provide a better explanation than mere perspectival restrictions would. The approach is minimally speculative since it involves no reconstruction of complex factors which cannot be verified to exist such as authorial intentions. The inclusion of some observational positions is incurred if mental spaces are involved in how people understand theories' contents. Such involvement appears unavoidable given how direct observation cannot suffice for any comparisons involved in assessing the truth of theoretical claims whenever they involve generalisations and hypothetical entities. Accounting for such abstrac-

tions requires corresponding (mental) models instead. Because one need not speculate on the details beyond what is already presented and because the involvement of such perspectives is incurred regardless, the approach should at least be reasonable. If the scope of included considerations possesses a pattern suited for someone in the writer's position, this would evidence an even stronger connection.

4.2 Conceiving Theories

The proposed model is intended to represent certain key aspects of the form in which theories of meaning become conceived by individuals who interact with sets of designated texts. Specifically, it provides a frame around which the contents of the states of affairs a theory posits, as they are conceived based on the designated texts, may be structured based on patterns shared by different theories.[5] Yet, this notion of some shared conception as expressing what a theory conveys has some potential issues. Mainly, the conceptions people form are not wholly dependent on the source material but also subject to idiosyncratic interpretations, and deriving singular representations from unique conceptions requires a degree of idealisation which bars materially identifying the result with any of them. This section presents an overview of the nature of such conceived contents as a valid form of representing theories of meaning. In so doing, the section also addresses the aforementioned issues. Both issues are resolved when the models are understood as representing the sets of properties of the relevant texts which interact with various cognitive models to guide interpretation. In this respect, accommodating each interpretation contributes to understanding the overall nature of the relevant texts. Similarly, the resulting

[5] Such conceptions are treated as mental spaces (Fauconnier, 1985; 1997) which model the contents of associated theories as states of affairs consisting of the invoked entities. Theories of embodied cognition in general also enter the picture in terms of the dynamics by which the mental models for representing the various elements which theories of meaning involve are acquired. For instance, how one conceives the proper frame (Fillmore, 1976; 1982) for a communication situation is treated as subject to the experiential precedent available to someone in a specific position, subject to influences such as the generational shift introduced by the spread of the Internet. Such precedent gives rise to prototype effects (e.g. Rosch, 1975; 1982), because of which the most familiar types of instances are treated as the standard by which categorial fit is assessed and matching models are the most readily retrieved for purposes of substantiating related notions. For many entities such as utterances, these defaults involve compatibility with how perception is organised.

idealised representations can be treated as a means of capturing which relative properties are relevant to pragmatic considerations such as approximating how an expert consensus acquires its form.

4.2.1 Deriving Conceptions

Special methods are required to overcome how contingent the relationship is between a text and its interpretation in order to to derive meaningful representations of how theories are conceived. Even without any degree of contextualism being assumed, people are *fallible*. To assume that everyone familiar with a theory may simulate an intricate mental model of the whole thing would be absurd. Quite possibly, *no* individual actively represents a theory in such detail. Once the possibility of contextualism is accepted, choosing the proper representation becomes even harder since the text itself would at most ground a formal skeleton and the details the model requires would depend on the conceiving individual. Much of the time, authorial intent is inapplicable as a standard since theories as objects of academic practice are what their public record expresses. A text may also fail to match intent given its medium and the complications of expressing ideas in words. Under such conditions, there would be no one true form of the theory to be indicated and analysed. As such, the suggested methods instead help derive *representative* models of the conceptions canonical texts linked to a theory engender.

Because the effects of individual traits only matter relative to their cumulative effect and only manifest relative to clusters, identifying an idealised conception starts with specifying a baseline and the associated set of factors. A baseline is an impression of a relatively uniform understanding shared by some group of relevantly similar people. Any *systematic* similarities between said people are the associated factors to be considered. For instance, while Wittgenstein scholars may differ in their interpretations of his work, most would subscribe to some basic tenets being present, and each would at least recognise some cluster of *viable* interpretations. Since the current focus does not lie with viable but *possible* interpretations, one ought to consider what shared factors between the arbiters distinguish the viable from the pos-

sible but absurd. Using theories of cultural evolution, one may trace such positions to dynamics which involve similar socioeconomic conditions: access to lectures and reading with set content as well as the results of non-academic factors typical of such personal trajectories. However, since individual conceptions are hardly representative of any trends given the interference of remaining idiosyncrasies, baselines are instead specified relative to the *attractors* (Sperber, 1996) specific to studied demographics such as academics from meaning-oriented fields of study (e.g. linguists). Such attractors represent those versions of specific types of representations towards which the specified ecological affordances bias the construction of such representations. In this case, then, the relevant attractors consist of conceptions of theories' content constructed under the influence of cognitive models a group shares.

For purposes of *conceiving* the sorts of hypothetical states of affairs which theories can be framed as expressing, the main, baseline-defining influences being considered are available frames and prototypical representations. As Fauconnier and Turner (2002, p. 102) state, such mental space constructions 'are very partial assemblies containing elements, structured by frames and cognitive models'. These cognitive models vary in specificity (Ibid. pp. 103–104). However, schematic spaces linked to outlining theories are assumed to mainly consist of generic representations and only ever contain cognitive models for particulars if said particulars are being represented in a prototypical manner.[6] The reason lies in how schemas function as templates for structuring particular instances which *fit* them. Whether such fit is even possible depends on whether the elements of the specific instance may be mapped onto the schema, and while generic representations match the range of particulars they encompass, representations of unique entities may only correspond to those specific entities. As such, a mental schema which included non-generic cognitive models

[6] A theory positing some specific entities to which linguistic items of a certain kind each relate such as some Platonic universals are assumed to merely be itemising pre-existing prototypical models. Theories which address specific linguistic items such as the demonstratives 'that' and 'this' might seem to represent singular entities but neither linguistic item's mental representation corresponds to some specific instance. In fact, such theories are generally intended to be applicable to demonstratives across languages, making the use of a specific expression merely prototypical.

would only fit instances in which the *specific* represented entities were positioned accordingly. While the exact cognitive models available to individuals are largely intractable, processes related to cultural evolution help engender a degree of expected invariance. Thus, observable social trends within specific fields are preferred as the best available approximations of involved cognitive models.

In the context of epidemiological models of cultural evolution, an attractor constitutes a point in Design Space[7] towards which transformations during cultural material being conveyed are statistically biased.[8] No such attractor is *absolute*. Each is defined relative to a field of psychological and ecological factors[9] such as the cognitive models available to a set of individuals given their personal trajectories which involve various forms of socialisation and habituation.[10] Many widespread misconceptions, for instance, likely involve attractors linked to commonly shared factors which

[7] While Sperber (1996) refers primarily to the 'space of possibilities', Dennett's (1995, pp. 104–145) term is more informative because the possibilities concern the *forms* such mental and public artefacts may possibly take.

[8] 'To say that there is an attractor is just to say that, in a given space of possibilities, transformation probabilities form a certain pattern: they tend to be biased so as to favour transformations in the direction of some specific point, and therefore cluster at and around that point.' (Sperber, 1996, p. 112). Such transformations include any change in form or associated content.

[9] 'The existence of attractors is to be explained by two kinds of factors: psychological and ecological. The environment determines the survival and composition of the culture-bearing population; it contains all the inputs to the cognitive systems of the members of this population; it determines when, where and by what medium transmission may occur; it imposes constraints on the formation and stability of different types of public productions.' (Sperber, 1996, p. 113)

[10] 'Unlike the estimation of probabilities which science constructs methodologically on the basis of controlled experiments from data established according to precise rules, practical evaluation of the likelihood of the success of a given action in a situation brings into play a whole body of wisdom, sayings, commonplaces, ethical precepts [...] and, at a deeper level, the unconscious principles of the *ethos* which, being a product of a learning process dominated by a determinate type of objective regularities, determines "reasonable" and "unreasonable" conduct for every agent subjected to those regularities.' (Bourdieu, 1977, p. 77, emphasis in original). The passage concerns the formation and effects of *habitus*, and the types of conduct being deemed reasonable or unreasonable can include interpreting a text or action in some specific manner. The notion of *successfully* interpreting a communicative act using any criterion besides correspondence with either the content of the message or its author's intentions might seem weird in concept. However, *that* these criteria are given such precedence – while practicable in many contexts – would itself be a manifestation of the dynamic Bourdieu describes. As works such as Bordo's (1987) critical reading of Descartes show by commenting on the propagated presuppositions linked to historical context, interpretations according to which a text conveys *more* than mere statements or intended messages are quite possible, though.

make the erroneous version likelier to be adopted.[11] The differences in interpretation between differently habituated people have patterns, and shared repertories of relatively invariant influences tend to cluster, leading to distinct attractors for associated demographics. Proposing statistical methods for identifying such convergence points for a graph dotting individual conceptions along the various axes of differentiation would divert the discussion. However, one should focus on identifying similarities between influences on individuals with more concentrated conceptions and estimate the directions for vectors associated with their differences. Ideally, a reconstruction which accounts for similarities corresponds to a position within the range defined by the results of counteracting the effects of vectors for individuals' differentiating factors. Influences on academics who study meaning are provided as an example below.

Given the general features of the modern education system relative to which position as academic is defined, invariants would involve (1) abilities beneficial to academic achievement, enabling both entry to a field and sufficient success for a professional position, and (2) an appropriate degree of familiarity with the canon of the field. The set of abilities which advantages pursuing an academic career involves some combination of (1) the capacity to parse spoken and written instructions *independently*, (2) acceptable self-expression, and (3) relative financial security.[12] Given in-

[11] Sherlock Holmes, for instance, never says 'Elementary, my dear Watson' in the original Sir Arthur Conan Doyle novels. Yet, this phrase emphasises the difference in competence as detectives between the two in response to Watson asking for an explanation and embodies both Sherlock's competence and oft-depicted endearment with condescending tones for Watson. It therefore *fits* both their dynamic and his image. The later propagation of the phrase in popular culture also creates an environment where it becomes easy to treat as essential to the original character.

[12] For instance, Eaves and Ho (1997, p. 284, 'conslusions' corrected to 'conclusions') describe some of the results of their study on autistic schoolchildren as follows: 'In the teachers' ratings of classroom behaviors, 48%-58% were considered to be average to above average in memory, both immediate and long term, and in fine-motor coordination for manipulation of materials. Weaknesses (below or very much below average) were in ability to pay attention (67%), follow instructions (75%), express self (75%), think abstractly (85%), complete tasks (58%), work independently (74%) and draw conclusions (83%). Except for memory and fine motor skills over half of the pupils were below average in all the other skills that are important for school success.' The focus should be on how each such skill is considered important for school success. Bourdieu and Passeron (1990, p. 73) discuss in more detail how self-expression which *reproduces* the dominant culture of discourse is considered appropriate in a class setting: 'The influence of linguistic capital, particularly manifest in the first years of schooling when the understanding and use of language are the major points

stitutional demands and the features of backgrounds matching them, each such typical feature can then be associated with further trajectorial similarities to help trace available cognitive models. However, such influences do not merely stem from outside the academia. The key texts of a given field of study also partly determine how theoretically informed matters are discussed and conceived. Such *definitive* works matter because their framing of the issues is common ground for the participants, colouring their *default* understanding of invoked terms such as 'proposition'.

Such influences all ultimately follow the same pattern: what a person has observed forms the baseline for how they conceive phenomena. Both personal trajectories and the paradigmatic texts of a field provide models for *prototypical* understandings of different entities and scenarios. Kuhn, for instance, tends to emphasise the importance of recurring illustrations of a principle in generating paradigm-constituting consensus.[13] Similarly, Rosch's (1978, p. 29) principle of *Perceived World Structure*[14] in relation to cognitive category-acquisition emphasises how perceived attributes co-occur in non-incidental ways. Depending on the instances available to

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of leverage for teachers' assessment, never cease to be felt: style is always taken into account, implicitly or explicitly, at every level of the educational system and, to a varying extent, in all university careers, even scientific ones. Moreover, language is not simply an instrument of communication: it also provides, together with a richer or poorer vocabulary, a more or less complex system of categories, so that the capacity to decipher and manipulate complex structures, whether logical or aesthetic, depends partly on the complexity of the language transmitted in the family.' For an example of high aesthetic demands favouring simplicity, one might consider the influence of early modern British aristocracy on academic discourse (Shapin, 1991). Finally, while economic background by itself should perhaps not be considered a strong determinant of academic success (e.g. White, 1982), Tokarczyk and Fay (1993, pp. 12–13) preface a collection of articles on the intersection of class and gender inequality in the academia by noting how dependent careers in the humanities are on external financial security which complements the low pay to allow participation in conferences and access to literature early in one's career.

[13] 'The student discovers, […] a way to see his problem as *like* a problem he has already encountered. Having seen the resemblance, grasped the analogy between two or more distinct problems, he can interrelate symbols and attach them to nature in the ways that have proved effective before. The law-sketch, say $f = ma$, has functioned as a tool, informing the student what similarities to look for, signalling the gestalt in which is to be seen. […] He has […] assimilated a time-tested and group-licensed way of seeing.' (Kuhn, 2012, pp. 188–189, emphasis in original).

[14] 'The second principle of categorization asserts that unlike the sets of stimuli used in traditional laboratory-concept attainment tasks, the perceived world -is not an unstructured total set of equiprobable cooccurring attributes. Rather, the material objects of the world are perceived to possess […] high correlational structure.' (Rosch, 1978, p. 29)

different groups based on their relative position and typical experiences, they can be expected to develop different conceptions or at least conceptions with differently weighted judgements of typicality. Constructing comprehensive mock-ups of academical types[15] in this respect is beyond the current chapter but some influences engendered by both typical personal backgrounds and a field's definitive works can still be illustrated.[16]

4.2.2 Example Influences

The manner in which both personal and institutional factors affect the propensity to derive specific understandings of concepts, especially when that understanding is considered *standard* within a field needs to be illustrated. Personal factors are challenging since prior research on the relation between specific factors and specific conceptions is scarce. As such, the first example is more speculative, and one must remember that such influence is not claimed to be *definitive* but merely *directional* – the totality of such influences orients how a person conceives related things, and each individual influence is but a vector. Both examples relate to propositions being conceived as analogous to full sentences in natural languages. In effect, this conception involves natural languages being treated as inherently mappable to states of affairs in a univocal fashion and exceptions as subversions of this presumed norm.

[15] Despite the above considerations, there are obviously more than a few viable trajectories to becoming a professional linguist or philosopher of language. For instance, instead of inheriting cultural capital, some academics adopt such norms primarily through formal education, becoming what Bourdieu and Passeron (1990, p. 161) dub a *wonderboy* – 'the working-class child who "succeeds against all the odds"' (Ibid. p. 175).

[16] Given the range of considerations being accepted – the provided examples not even being considered exhaustive – it is a fair worry whether the method can yield anything tractable. The risk is how the requirements of this approach might simply be overwhelming, especially when factors can interact with each other, such as when acquaintance with different fields might recontextualise the claims made in each (e.g. sociology and psychology). *Perfect* tractability is almost certainly impossible but not only in this context. It is an issue with most queries involving people. Once it is accepted that the degree to which the method is tractable will be imperfect, one must ask if the available level of tractability is worthwhile. Since the approach registers *systematic* factors characteristic of the demographics of interest, the required common or functionally equivalent grounding ought to constrain the number of explanatorily significant factors. Ethnography, for instance, tends towards even greater holism without the field's value being undermined by this. The provided examples focus on less obvious considerations to draw attention to their potential effects.

The chosen example of a pre-institutional influence is early exposure to written fiction.[17] The reasoning for this choice relies on how conceiving the described fictive states of affairs relies solely on written sentences. The result is access to experiences of sentences corresponding to relatively well-defined worlds.[18] Specifically, there are two key factors enabling the relation between text and imagined states of affairs. Firstly, the reader of fiction has grant to conjure a world without being subject to checks and balances. There is no external examination of whether the imagined results match the text. Arguably, they *never* do given the degree of enrichment necessary to transform what is described into definite states of affairs. This is masked by the second consideration: published fiction provides an extremely biased representation of how descriptive language operates because the context for any given description is so curated. The provided descriptions embody the combined effort of authors and editors to provide a maximally evocative whole. The rest of the text provides a context which is tailored to make individual statements unambiguous.

As a result, when the notion of propositions is later introduced along the lines of them being the proper descriptions of sentences' content which are compared with the world to determine truth and falsity, habitual readers of fiction already have access to corresponding experiences. Such experiences are neither universal nor necessarily central to one's experiences with the relationship between words and states of affairs. However, in the absence of experiences subverting the expecta-

[17] This example obviously assumes a connection between familial socioeconomic status and early access to fiction. Some evidence supporting this assumption concerns differences in how literature is valued based on class (Bodovski, 2010) and how economic stability enables higher exposure. As Mol and Bus (2011, p. 288) note, the number of books at home is a rather reliable measure of the extent to which a child is exposed to literature. Books cost money and both how they are valued and available resources contribute to the what proportion of income they merit and what that proportion may buy. In this regard, lower income families tend to be disadvantaged compared to middle-class ones (e.g. Chin & Phillips, 2004, pp. 199–201).

[18] While this aspect is tangential to the mechanism being discusses, exposure to fiction apparently also stimulates and helps develop portions of the brain central to social cognition and empathy (e.g. Mar et al, 2006; Tamir et al, 2016). Given the role Theory of Mind plays in communication situations even without contextual penetration and the primacy of intentions being assumed, such cognitive resources being recruited and developed may also well contribute to sentences appearing to correspond to immediately retrieved content.

tions which result from such unchecked imaginings based on purposively manufactured material, they *can* become definitive of one's understanding of the relation between language and truth. In the absence of comparable experiences, the standard notion of propositions is relatively less intelligible and given the choice, a person may be relatively more sympathetic to alternative accounts of what language conveys such as global expressivism (e.g. Barker, 2007).[19] For contrast, consider the alternative scenario where the experiences of language central to a person's understanding of what they involve consist of dog-whistling (e.g. Haney López, 2014) and veiled insults or threats. Such language inherently avoids matching form with message. Indeed, the message itself may largely contend to point and *suggest* instead of anything being asserted. The audience's intended takeaway need not be translated into further sentences. The takeaway may just be an action-guiding association, for instance, such as when cyberterrorists harass someone for public participation.

Obviously, such *potential* background influences constitute but part of an academic's personal trajectory. A more readily analysable influence are the authors whose work suffuses their field through direct and indirect references. Among other things, presence affects availability and often engenders prestige. Availability includes both probability of being encountered and afforded forms of acquaintance. Often, inclusion in taught curriculums ensures meaningful exposure during students' formative stages of intellectual development. Views reliant on exposure through independent research reach limited audiences, including among those otherwise primed to be sympathetic to them. Similarly, while widespread enough acclaim to secure such a position is generally a sign of merit, relative lack of awareness does not signal demerit. Obscurity may fallaciously be associated with relative lack of merit but more importantly, it ensures that judgements of merit lack corroborating public evidence. Hence, such judgements have lower associated confidence.

[19] According to Barker (2007, p. 49), an assertion involves the produced sentence signalling the utterer's disposition to express the grounds for some specific pre-doxastic mental state in this manner. Naming a designated entity (e.g. 'dog'), for instance, would convey that its presence grounds a state which is necessary for forming beliefs about it. Global expressivism seeks to reduce semantics to non-rule-governed practical competence, eschewing all prescriptions of proper meaning (Ibid. p. v).

For instance, while Davidson (2001; 2005a) is not the only philosophical proponent of truth-functional semantics whose analysis is based on Tarskian theorems, he is a core influence on a generation of philosophers of language. While the mantra '"snow is white" is true iff snow is white' and its derivatives do not originate with him, Davidson is a major *distributor* of such schemata in the philosophical mainstream. Such T-schemata equate propositional content with the form of corresponding sentences in natural languages.[20] Unlike deeply formal representations of propositional content such as '$\exists x((Fx \wedge \forall y(Fy \rightarrow x=y)) \wedge Gx)$' which represents a Russellian definite description (Russell, 1905), such schemata thus readily tap prior conceptions of the sort presented above, grounded in the experientially immediate everyday relationship between words and meaning. That they tend to invoke sentences with limited uses in most contexts also helps in this regard. Unlike contextualist rallying cries such as 'The leaves are green' (Travis, 1997, p. 111) or 'I've eaten' (Wilson & Sperber, 2002, p. 66), example T-schemata require no lengthy elaboration. Properly understanding T-schemata may take time and study but forming a memory trace does not, unlike when examples only make sense alongside either symbolisation keys or detailed descriptions of context.[21]

4.2.3 Ontology of Conceived Models

Once a reasonable catalogue of the most impactful influences has been mapped alongside the mechanisms through which each factor has an effect, predicting how any given detail of a theory would typically be conceived becomes possible. While choosing a baseline representation helps designate a reference group and *approxi-*

[20] This claim is made independently of Davidson's own use of T-schemata to eschew propositions (e.g. Davidson, 2005b). More accurately, perhaps, T-schemata equate the functional role shared by propositions with natural language sentences. As Davidson's own commentary on Horwich's (1990) propositional deflationism (Davidson, 1996, pp. 30–32; 2000, pp. 9–10) hints, even professionals risk equating the sentences quoted in T-schemata with propositions. This observation corroborates the presented notion that such a prior tendency exists and that T-schemata are poised to feed it even when that result is not being intended.

[21] Despite how the example might seem to imply that there is an issue with treating propositions as analogous to natural language sentences, it only demonstrates possible non-rational reasons why people would be receptive to said conception. Any rational reasons are beside the subject of this analysis.

mate how an encompassing model of a theory would be conceived by said group's members, the actual models depend on individual details being derived relatively independently. Where people often rely on non-encompassing, pragmatically sufficient impressions, the idealised representations of set demographics' conceptions accommodate the theory in full detail. In effect, establishing an appropriate sample of reference group-specific influences in relation to the identified attractor for them allows reconstructing the mental space equivalents for how passages describing a theory would be understood relative only to said definitive influences. These are the set of influences which best explain why members of the demographic tend to gravitate towards their main attractor. In this manner, it is possible to derive each key component separately (while noting any contextual effects the order in which they are presented may have) and aggregate them to form an encompassing representation of what conceiving the total schematic form of a specific theory would involve. Such idealised forms represent how such schemata would be conceived independently of cognitive load and incidental idiosyncrasies. Even if the results correspond to no actual person's conception, though, they represent what those conceptions approximate rather than a top-down prescription.

Properly speaking, the sorts of models derived in this manner selectively represent a set of relational properties or capacities attributable to a selection of texts which express a theory of meaning. What is being recorded and then reconstructed are qualities which the texts afford and which are manifested under specific conditions – namely, when the texts are interpreted in the presence of set influences. Hence, even though the resulting idealised models represent no particular actual ways the theories are conceived (even when a model coincides with such a conception), they remain grounded in reality. Importantly, such analyses are agnostic towards the degree to which different sets of influences might result in convergent conceptions on the theory's content. This indifference is motivated by how the proposed methods accommodate both the possibility of extensive contextual penetration and maximal invariance across conceptions. If the distribution of people's conceptions is highly dispersed, appropriate sets of influences can be specified relative to prag-

matic considerations linked to the task at hand. Such analyses capture aspects of the total. While the results are therefore partial and cannot be generalised into a true representation of what the theory encompasses, they remain grounded in objectively analysable relative qualities. Under such conditions, they would provide the best approximations of how the theory becomes conceived for various purposes. If conceptions across the board converge and any deviation may be traced to contingently made errors rather than systematic differences, the associated form may be treated as a placeholder proper representation of the theory.[22]

To illustrate how such properties operate, they can be treated as macroscopic parallels to the affordances responsible for phenomena such as ambiguity. While any linguistic pattern may acquire any meaning based on the totality of facts which hold, affordances encompass the states of both interacting entities (e.g. Sanders, 1997) and therefore, only properties sensitive to realised conditions properly speaking contribute to them.[23] Consider the term 'title', for example, which is multiply ambiguous with no interpretation sufficiently dominating to extend to neutral contexts as the default meaning. Among the common readings, each would seem to predominate in the lexicon of different professions, resulting in authors, lawyers, and military officers being likely to have different distributions for how probable they are to default to a given reading. If the differences between groups are statistically significant, associated institutional conditions can be treated as a definitive influence of the sort this method seeks to identify. These details would therefore interact with the properties of the term 'title' endowed to it by whichever conditions are responsible for the available readings. The very same sort of dynamic seems applicable to how theories come to be understood based on designated corpuses of associated texts. The properties of the text afford a range of differing conceptions of a theory.

[22] Such considerations include a temporal dimension. Hence, aggregating the conceptions until any given time may only corroborate the expectation that future conceptions will also converge but never prove that they will.

[23] As a reminder, an affordance is 'an opportunity for use or interaction which some object or state of affairs presents to a certain kind of agent' (Clark, 1997, p. 172). The 'agent' in this context need not be a properly intentional entity; steep slopes afford for rounded rocks to roll, for instance.

4.3 Situated Meaning

The products of the method suggested above are indices specifying how different elements of a theory are conceived such as whether set demographics are liable to represent words primarily as written or pronounced. There is implicit structure in the connections grounded by conceived relations but its exact format of presentation depends on template-based framing. Such framing does not adjust the relations. It merely highlights specific aspects of the total in a manner conducive to comparisons. The template based on the schema derived from attributed situations maps onto the contents of theories of meaning, and this mapping emphasises the relationship between the sources of meaning and its instantiators as well as the role of involved observers in defining the scope of available sources. It also helps ground the identities of involved entities since the positioned observers in particular must have identifiable forms of access to said entities for them to contribute to the processors' impressions.

4.3.1 Formal Template

Definition 2 maps the schema from definition 1.2 onto theories of meaning. While the notation is adjusted for the context, most involved formal structures remain the same. The largest adjustment involves incorporating two designated observers – one positioned and the other detached – by embedding one in the other. Similarly, coordinates are defined in relative rather than absolute terms given the structure of the involved mental spaces, and all constituents are treated as generic by default.

Definition 2, Template for Reframing Theories of Meaning:

$S_x = \{O^g, P^g, R^g, A^g, C^g\}$

$E = (O^g \cup P^g \cup R^g \cup A^g \cup C^g) = \{e_1, e_2, \ldots e_n \mid n \geq 1, e_x \in \langle r_y, E^*_z \mid r_y \in R^b, E^*_z \cap E^i \rangle\}$

$E^i = \{e_1, e_2, \ldots e_n \mid n \geq 1, e_x \in \langle p^i, e_y \rangle\}$

$E^{pr} = \{e_1, e_2, \ldots e_n \mid n \geq 1, e_x \in \langle p^d, e_y \rangle\}$

$O^g = \{o_1, o_2, \ldots o_n \mid n \geq 0\}$

$P^g = \{\langle p_1, e_1 \rangle, \langle p_2, e_1 \rangle, \ldots \langle p_m, e_n \rangle \mid m \geq 0, n \geq 0, \{e_1, e_2, \ldots e_n\} \cap O^g\}$

$R^g = \{\langle r_1, E^*_1\rangle, \langle r_1, E^*_2\rangle, \ldots \langle r_m, E^*_n\rangle \mid m\geq 0, n\geq 0, E^*_x = \langle e_1, e_2, \ldots e_n \mid n\geq 2\rangle, (E^*_1 \cup E^*_2 \cup \ldots E^*_n) \cap O^g\}$

$A^g = \{E^\dagger_1, E^\dagger_2, \ldots E^\dagger_n \mid n\geq 0, E^\dagger_x = \{e_1, e_2, \ldots e_n \mid n\geq 2\}\}$

$C^g = \{\langle r^a, \langle e_1, \langle I_1, t_1\rangle\rangle\rangle, \langle r^a, \langle e_2, \langle I_2, t_2\rangle\rangle\rangle, \ldots \langle r^a, \langle e_m, \langle I_n, t_q\rangle\rangle\rangle \mid m\geq 0, n\geq 0, q\geq 0, r^a \in R\}$

$R^b = \{\langle r^b_1, \langle W, \langle r_1, E^*_1\rangle\rangle\rangle, \langle r^b_1, \langle W, \langle r_1, E^*_2\rangle\rangle\rangle, \ldots \langle r^b_m, \langle W, \langle r_n, E^*_q\rangle\rangle\rangle \mid m\geq 1, n\geq 1, q\geq 1, E^*_x \cap E^i\}$

$W = \{\langle I^{nw}, \langle I_1, \langle I_2, \ldots \langle I_n\rangle\rangle\rangle\rangle\rangle \mid n\geq 1, I^{nw} \in I, I^{nw} = E, I^{nw} \supseteq I^{pr}, I_x \in I\}$

$I = \{I_1, I_2, \ldots I_m \mid m\geq 1, I_x = \langle\langle e_1, \langle e_2, \ldots \langle e_n\rangle\rangle\rangle \mid n\geq 2\rangle\}$

$I^{pr} = \{\langle e_1, \langle e_2, \ldots \langle e_n\rangle\rangle\rangle \mid n\geq 2, e_x \in \langle r^a, E^*_y \mid E^*_y \cap E^{pr}, |E^*_y|\geq 1\rangle\}$

Explanation of Definition 1.2:

S_x: theory-specific schema for nature of meaning

E: set of elements in the schema for a theory of meaning

e_x: element of a schema for a theory of meaning

E^i: set of constituents of the meaning-instantiator

p^i: the property of having been designated as a meaning-instantiator

E^{pr}: set of constituents of the processor of meaning

p^d: the property of having been designated as part of the processor

O^g: set of generic objects in the schema

o_x: conceived generic object

P^g: set of generic properties in the schema

p_x: type of property

$\langle p_x, e_y\rangle$: p_x is instantiated by e_y

R^g: set of generic relations in the schema

r_x: type of relation

$\langle r_x, E^*_y \rangle$: r_x is instantiated by the elements of E^*_y

A^g: set of generic partial states of affairs in the schema

C^g: set of generic spatiotemporal coordinates in the schema

r^a: relation of arrangement

l_x: relative location

t_x: relative time

$\langle r^a, \langle e_x, \langle l_y, t_z \rangle \rangle \rangle$: r^a is instantiated by e_x relative to l_y and t_z

R^b: set of relations of observation

r^b_x: type of relation of observation

$\langle r^b_x, \langle W, \langle r_y, E^*_z \rangle \rangle \rangle$: r^b_x is instantiated by W relative to relation $\langle r_y, E^*_z \rangle$

W: set of layers of integration which correspond to the observer

I^{nw}: layer of integration corresponding to detached perspective

$\langle I_x, \langle I_y \rangle \rangle$: I_x is a single level higher order of integration than I_y

I: set of layers of integration

I_x: specific layer of integration

$\langle \langle e_1, \langle e_2, \ldots \langle e_n \rangle \rangle \rangle \rangle$: set of inputs up to e_n is ordered according to the format of a layer of integration I_x

I^{pr}: layer of integration corresponding to the positioned processor

r^a: relation of access

Definition 2 uses set-theoretic notation to state (1) that the cognitive schema for how a theory of meaning becomes conceived can be specified using sets of mental models of various entities as the basic elements and (2) that the selection of such entities is based on relations involving the designated meaning-instantiator being recog-

nised by the appropriate observer. The baseline components are treated as representations of generic entities because the resulting models are schematic rather than representations of particular scenarios. For conceived situations, even when prototypical representations are involved, they substitute for *particular* entities, whether verified or hypothetical. Theories are schematic in the sense that the associated structure has general applicability and gets fitted onto particular instances which it must suit. As such, they only encompass singular entities' representations insofar as those specific entities are essential to every single application of the schema. Consider how one might conceive their situation in a manner inclusive of some entity which they insert based on testimony or indirect evidence such as another person behind a corner. In the absence of further evidence, the person would be represented using available generic models for people. However, the resulting conception would involve a particular person being represented thus rather than a representation of a generic person even despite the inclusion of a generic representation of a person. Meanwhile, theories of meaning must accommodate the possibility of anyone being an utterer. Hence, even if the image of a particular person were involved, they would represent a generic role reserved for any person.

4.3.2 Relative Coordinates

Generic coordinates involved in how theories of meaning are conceived are specified as relations of arrangement involving the schema's elements and relative spatiotemporal positions. An ordinal organisation is proposed since attributing measure-based spatial organisation to the associated mental spaces would overstate how analogous they are to actuality. In practice, this formalisation tries to capture how significance is occasionally attributed to factors such as antecedence, co-occurrence, or presence. For instance, a Kaplanian approach (Kaplan, 1989) to the referents indexicals (here, now, etc.) makes a speech act's time and place definitive of the associated proposition for the expressions which require inputs related to them. There is no pre-set number of available values for either coordinate since different theories recognise different relative positions as significant. However, insofar as coordinates are involved,

the corresponding model seems to include some *origo* for each dimension. If the different available values were represented using numerals, this position would correspond to zero: available directions and relative distance from central foci are defined relative to it.[24] One must note how the set of generic coordinates specifically lists the functionally relevant set of coordinates. Each entity involved in relations of arrangement may participate in multiple such relations involving distinct pairs of spatial and temporal coordinates. However, what matters are the *pairs* in relation to whichever functional role the associated entity represents. When an entity is associated with multiple such pairs, they define the range of positions available to it, and each such position is defined relative to both dimensions rather than either individually. Such pairs are used to avoid implying that a position's inclusion as part of a model means that its combinations with any available value for the other dimension become viable.

For instance, assume that the speech act and resulting utterance inhabit position ⟨0, 0⟩ in Kaplan's (1989) theory of demonstratives' meaning. The reason is how Kaplan lets the time and place of an utterance define the values for the context which contributes to its meaning.[25] Correspondingly, ⟨1, 0⟩ would represent some approximation of the immediate surroundings at the time: the *here* and *now*.[26] Focusing on distance, if a value of 1 is associated with immediate surroundings – *the Here* – then 2 might be specified as 'elsewhere identifiable' – *the There* – and so on, for each functional spatiotemporal category Kaplan's theory implements. The numerical representations of these categories are merely a notational shorthand which helps capture relations of difference and direction. What matters are the relative positions of the model's elements – the functionally relevant potential contributors to

[24] For instance, negative values can be associated with the past and positive with the future on the temporal axis but no theory *need* include either. Most ignore the possibility that future events may modulate contemporaneous meaning, for instance. Spatial relations may standardly include three dimensions but no reasonable theory of meaning distinguishes between them. This makes *distance* a natural fit for the spatial axis, and therefore, only positive values would be involved.

[25] Kaplan (1989, p. 494, emphasis in original) specifically identifies contexts with 'possible occasions of *use*'. Hence, when a term is used – namely, uttered – the context extends from the corresponding spatiotemporal coordinate.

[26] 'Here' is defined as 1 rather than 0 since the value of 0 is associated with the utterance itself and while things may be contemporaneous with it, its immediate spatial surroundings are distinct.

meaning – whenever a theory recognises such positions *themselves* as potential contributors to meaning. Said elements may range from individual objects such as neurons to scenarios such as pointing with a finger to itemised coordinates such as 'tomorrow'. Bare relative coordinates not associated with any such items are not included as an option since doing so would imply that the corresponding mental spaces possess spatial organisation beyond some arrangements being recognised.

The template is intended to also accommodate cross-modal considerations but modality is excluded as a dimension for coordinates because relative modal position cannot meaningfully be reduced to a universal set of distinct values. Instead, representing cross-modal relations using the template involves specifying *distinct* objects or states of affairs which are linked by a counterpart relation. The exact axes along which and the extents to which theories accommodate cross-modal considerations depend on the nature of applied counterpart relations. In effect, what a theory treats as the foundation of counterparthood and the extent to which it pursues each resulting direction help approximate the cross-modal scope the theory is applying. Given that counterpart relations across mental spaces are a major connector (Fauconnier, 1985, pp. 18–22) and that blending the thus linked spaces only requires *some* appropriate cognitive template, the solution is sustainable in relation to people's cognitive capacity. Exact details depend on the kinds of counterpart relations being applied. Some template options for blending include framing branching developments of a scenario as a brood with common ancestry or rigid designation as continuous essence between the counterparts within schematic scenarios. A familial metaphor like the former invokes imagery such as the vertically oriented charts for lineages and how progeny cluster around their parent as imperfect miniature replicas of it. These kinds of image schemata provide a *spatial* mapping for modal relations (e.g. tree structure), allowing a single mental space to accommodate the whole. Thus, while the template itself does not explicitly specify the means to represent a modal dimension, it regardless affords the means to do so in a manner consistent with how people appear to visualise modality. While modal scope is later defined in terms of differentiation along various axes, theories themselves may apply different relations.

4.3.3 Observer Positions

Definition 2 incorporates a definition of observers which designates two layers of integration. The template also eschews reference to points and modes of access despite their integral role in observers' constitution. The reason for the former detail is how each theory of meaning must accommodate *both* a positioned processor's perspective and the detached viewpoint underlying its approach. The former represents the generic processors of meaning as they are conceived as part of the theory while the latter is the detached perspective relative to which the total theory gets presented. Both are treated as necessary for reasons addressed below. As for points and modes of access, both are assumed to be involved were the corresponding observers defined relative to their actual implementation. However, the idealised model is multiply realisable and represents the common structure of the associated constructed spaces. Being multiply realisable, this structure need not *coincide* with the underlying material structures even though its elements are mappable onto the latter. As such, while points and modes of access are involved in each implementation, they are not *contained* within the model itself.

Formally, the generic processor's perspective is treated as a layer of integration which constitutes a subset of the detached position's input and therefore belongs among the layers of integration which define the position relative to which a given theory is presented. The detached observer is identified with this total viewpoint on the posited schema. In this manner, the embedded more limited perspective can be extracted when necessary such as when it is compared to one's conception of people's observational capacities outside any theoretical commitments. Such comparisons are involved in assessing how realistic a theory's demands on people are, for instance. This positioned observer has no set distance from the layer identified with the detached observer such as always immediately preceding it to allow for the possibility of intermediate layers of integration as part of the physical system responsible for implementing the model. While such layers are not themselves represented within the model, it must allow the possibility.

These two perspectives are both needed. The generic processor provides the means for the theory to explain how the meanings it posits relate to experienced meaning. The relation between the two cannot be left open-ended because experienced meaning ultimately grounds any discussion of meaning. Without a tractable relation to how meaning is experienced, theories of meaning have no subject matter to motivate them. How meaning is experienced and what the theory posits may differ but this would need to be addressed regardless to show how there would still exist a relation which leaves room for the latter despite the former – preferably as a means to partly explain such manifest meaning. The alternative is plain unsustainable since the resulting theories would be circumventing the very phenomenon they supposedly address. Meanwhile, the detached perspective is needed because a theory is general: the involved elements cannot represent only particulars, and positioned perspectives are limited to treating the entities of the space they share as particulars. Specifically, regardless of the perspective from which the phenomena being explained are *approached*, the results must be *presented* in a generalisable manner.[27] Otherwise, they would only describe particular instances instead of providing explanatory models.

What exactly constitutes the perspective of a positioned processor within a theory can be illustrated using Jaszczolt's (2005; 2016) notions of Model Speaker and Model Addressee. Within Default Semantics, any given Model Speaker or Model Addressee represents an idealised particular interlocutor with specific traits. In effect, they are bundles of *defaults* – mental associations specific kinds of people will retrieve automatically in specific kinds of situations.[28] According to the theory, the set of defaults

[27] For instance, someone like Keller (1995) who criticises the objectifying and forceful aspects of the standard conception of scientific objectivity as a view from nowhere (e.g. Nagel, 1986) might propose *approaching* the phenomena in a more mindful manner focused on personal relations with the subject and their significance in relation to its nature, given what is known of oneself (Keller, 1995, pp. 116–120). Yet, the results remain such that the relevant relations can be characterised in generic terms rather than only in relation to the researcher's personal involvement. The results are objective despite the approach not bracketing the positioned subjectivity of the researcher in the manner Nagel (1986, pp. 5–6), for instance, advocates.

[28] 'Situation-based defaults of Default Semantics are just situation-based, automatically retrieved meanings.' (Jazsczolt, 2016, p. 14)

retrieved in a given kind of situation involving an utterance constitutes its meaning which can be predicted by considering what kinds of immediate associations would be expected of model interlocutors with specific traits.[29] Thus, while any given Model Speaker or Model Addressee will not constitute the sort of generic interlocutor which can be considered a part of a schematic understanding of a theory, they each embody claims about how meaning is processed. In this respect, both can be framed as templates belonging in a schematic representation of the theory. The sorts of things which may correspond to a Model Speaker or Model Addressee are possessors of cognitive defaults in general. Within the schematic representation of a theory's elements, they possess the ability to acquire defaults through ecological factors and the ability to automatically retrieve said defaults in response to utterance-involving scenarios. The corresponding perspective can then be reconstructed given how these processes are characterised. Since a given individual may act as either speaker or addressee depending on circumstances, each role is being applied to a singular type of entity, defined by its ability to process meaning.[30]

Within how a theory becomes conceived, the positioned processor is therefore the entity to which the theory predicates the qualities it associates with processors of meaning. Its perspective applies to a mental space of prototypical representa-

[29] 'A semantic representation so understood is called in DS merger representation. [...] The word "merger" and the Greek letter sigma (Σ) that symbolizes summation, reflect the fact that information coming from different sources merges to produce one semantic structure. [...] at the current stage of its development, information is being allocated to the following sources: (i) world knowledge (WK); (ii) word meaning and sentence structure (WS); (iii) situation of discourse (SD); (iv) properties of the human inferential system (IS); (v) stereotypes and presumptions about society and culture (SC).' (Jazsczolt, 2016, p. 80)

[30] Few theories make the constructed nature of how processors of meaning are presented as explicit as Default Semantics. However, presenting them as just *people* does not remove the theory-specific framing which defines how people *would* process meaning *should* the theory be correct. For instance, when Borg (2004, pp. 197–198) provides an example of how 'Anne' would interpret a demonstrative-involving utterance of 'That is mine', produced by 'Bob', the posited mental processes are characteristic of how processors of meaning are conceived within the theory. While Borg does not veil this, given how she mentions the description being an *image* she would like to present, the theoretical schema being imposed on an analogue for a natural situation may mask how the participants remain theoretical constructs. Both 'Anne' and 'Bob' are particular instantiations of minimal semantics' generic schema for a processor of meaning. This being the case, abstracting from such examples helps model how the theory conceives a processor in the abstract.

tions for explanatorily relevant categories such as 'utterance' or 'proposition'.[31] However, actual perspective-taking involving this positioned processor appears largely limited to its instantiation within the specified parameters of illustrative scenarios. The suspected reason is how the relevant schemata may well not involve kinds of prototypical representations which correspond to well-formed imagery.[32] An example scenario's prompts would be needed to make the involved scenery recognisable enough to be pictured. However, this strong connection to example scenarios should not distract from the general demands on what the observer must be able to access. Accounting for the expectations on processors helps assess whether a theory's demands are realistic. For example, whenever a theory reduces meaning to cognitive processes, the posited perspective of the generic processor also defines the maximum scope within which meaning-defining considerations may be aggregated.

As stated, the detached observer associated with a given theory corresponds to the perspective relative to which the totality of a theory's contents is presented. While each individual has their own perspective into which this position is embedded when the model the material provides is being conceived, the interface between text and a given individual *regulates* their relationship. As Sperber (1996, pp. 34–35) emphasises, the contents of such public representations are reconstructed using personally available cognitive resources during the process of interpretation. However, the effects are mostly benign because the details of involved cognitive models have limited effect on the associated *organisation* which is the main focus of theories. For instance, one's prototype for 'person' may have unfortunate implications in many a context but associated sex and appearance are unlikely to restructure one's under-

[31] A prototypical representation of an utterance might be speech, for instance, despite the technical sense of the term also including both writing and sign languages. It need not be well-defined and can likely vary contextually between semi-structured nonsense and salient example phrases.

[32] Despite a common misconception and the kinds of prototypical representations with which this thesis is mainly concerned, representations exhibiting prototype effects *need* not be constituted by mental imagery of a typical member of a category, given a person's experiences. As Rosch (1978, p. 40) states herself: 'Prototypes do not constitute a theory of representation of categories. […] Prototypes can be represented either by propositional or image systems […] As with processing models, the facts about prototypes can only constrain, but do not determine, models of representation.'

standing of the person-involving dynamics relevant to theories of meaning.[33] The arrangement involving a person and the relations being posited takes precedence, and such arrangements are what texts which express theories provide. Thus, texts embody general perspectives to which people's individual reconstructions of states of affairs based on the provided prompts manifest. These prompts' contents define a given perspective's identity.

The resulting perspective therefore positions readers in a view from nowhere (Nagel, 1986) relative to the presented contents: since the relevant corpus delineates the hypothetical states of affairs a theory posits, it grants total access to this whole. Yet, despite being detached, the involved perspectives are not strictly objective, and as such, they warrant individual analyses. Where Nagel (Ibid. pp. 5–6) states that objectivity is *achieved* through a succession of advances which gradually shed idiosyncrasies in perspective, the current approach treats such an approach as an *approximation* of the associated ideal at best. There is no necessary connection between this ideal of detachment and objectivity since viable alternatives to said ideal for producing epistemically optimal representations such as intersubjectivity (e.g. Longino, 1990) and disentanglement (e.g. Bordo, 1987; Keller, 1995)[34] are available. Even assuming that total detachment would constitute a form of objectivity, no available *implementation* would suffice to achieve it. While distancing oneself from one's usual, personal perspective is possible and occasionally indispensable, the result inevitably remains anchored in that starting position. Hence, views from nowhere are considered a *type*

[33] Any such impact appears more likely to occur during the construction phase should there be idiosyncrasies between demographics which are ignored based on a biased experiential sample. For instance, social class may conceivably influence how communication is understood – whether it primarily involves well-formed descriptions or more freeform and ostensive naming conventions, and so forth.

[34] In the introduction to a collection of articles on objectivity, Megill (1994) differentiates between four senses of objectivity: (1) absolute, (2) disciplinary, (3) dialectical, and (4) procedural. Outside dialectical objectivity, the ideal of detachment seems shared to different degrees among the alternatives. For instance, Daston and Galison (2007) discuss the historical development of how objective methodology is understood and while there have been phases which emphasise good judgement, the trend has been towards minimising the subject. Thus, even under a shared ideal, different implementations remain possible.

of perspective rather than an absence of perspective or some uniquely privileged singular perspective. The limit on available implementation concerns how in distancing oneself from one's usual perspective, one would be approaching a mental space constructed based on *expectations* rather than reality as such. One's actual position relative to reality remains grounded and positioned, and if a mental space is being substituted, its construction is dependent on available material. Where the results exceed direct perception, they would therefore rely on inference and extrapolation. Whether the result resembles reality is not dependent on the *distancing* but the reliability of these expectations which remain dependent on prior interactions determined by personal trajectories. This underlying dependence on the personal prevents the *total* elimination of idiosyncrasies. Hence, detached perspectives retain identities distinct from each other instead of instantiating a singular, objective viewpoint, and the differences between such perspectives can be analysed meaningfully. Such differences include the inclusivity of their scope and the selection of recognised entities.

4.4 Takeaway

The presented model for attributed situations works as a suitable framing device which allows structuring the contents of theories of meaning as they would be conceived because both share a schematic structure where the focus is on defining some central entity's relationship with its surroundings. Approaching theories of meaning from this angle locates the kind of entity responsible for instantiating meaning at the heart of a set of relations which the theory treats as definitive of the influences on the meaning of such entities. These sets of relations determine the meanings a theory attributes to the relevant instantiators. As such, the instantiators must be compatible with their designated position relative to each kind of relation involved. Such theory-internal demands based on the coherence of such models may require that the material identities of associated instantiators exceed (or subceed) whichever manifest entities the names used for them would usually be understood to designate. Additionally, the parallel with attributed situations reveals how any conception which represents such models must involve a perspective from which they are viewed. Such

perspectives are constructed based on the material provided to a conceiver which may only ever present a selective, limited picture even when the theory alleges to account for meaning in some absolute sense. As a result, in being conceived, every theory implements a scope for the considerations which it registers, and this scope is limited by what is being presented.

In discussing how theories are conceived, one must specify *whose* conceptions are being used. Modelling particular individual conceptions alone would be of limited general significance, however. As such, the presented approach involves reconstructing idealised models of how specified demographics' typical members *would* conceive the contents presented in the designated texts based on the specific influences characteristic of the experiences of members of these groups. Since invariance in how a theory gets conceived cannot be guaranteed, the possibility of variance must be accommodated in this manner. Even when a range of potential conceptions results from such analysis, the idealised models each represent something objective: the properties of the text which afford such interpretations relative to the specified sets of influences. Any variance detected between such models of the same theories ought to invite discussion about the preconditions for arriving at specific conceptions and whether such reliance is justifiable.

This discussion on how theories are conceived – which results in the versions of those theories with which people actually operate in practice – provides the means to reconstruct such models using the inventories of involved components and the relations between them based on definition 2. This approach to theories also highlights the details which motivate the sorts of further analyses proposed in the remaining chapters. If theories do not directly describe reality but rather, schematic states of affairs to be superimposed onto reality, there are demands of internal consistency which can limit the possible material implementation of functional categories like that of the instantiators of meaning. When conceived models are necessarily limited in their scope and their contents are tied to what texts expressing a theory present, there must be a range to the considerations being implemented.

Chapter 05: Instantiators

Structuring the contents of a theory of meaning using the framing derived from attributed situations puts in focus the necessary relationships between sources of influence and the designated instantiators of meaning. The minimal meaningful unit suited for a theory's purposes consists of whichever entities are required to fulfil that role of recipient. Such entities are not guaranteed to correspond to the experientially manifest instances being indicated. Even when the inclusion of said constituents is considered necessary, their sufficiency for the role has not yet been proven.

As basing judgements on the criteria for sufficiency on any theory-external principle risks privileging certain approaches, one ought to instead contend with what a given theory considers the basic level of meaning. This principle minimises the complexity of these instantiators and provides grounds for comparisons in terms of parsimony.

While terms that designate manifest meaningful entities like 'word' provide a baseline for what instantiator identity ought to include, judgements of their self-sameness do not converge to provide clear material identities. Thus, sufficiency relative to a given theory's requirements is instead specified relative to the demands of the definitive relations in which the instantiator must participate in set roles. In effect, once the relations involved in basic meaning and the manifest core identity have been identified, one must analyse the conditions for participating in said relations and identity which kinds of entities materially present in (all) the relevant scenarios may fulfil them.

5.1 Boundaries

An instantiator of meaning is whichever material configuration such that a meaning is attributable to it given some theoretical framework, or the corresponding theory-internal counterpart. In terms of the schema used to frame theories of meaning, an instantiator parallels an attributed situation's core entity: once it is designated, its significance lies in its participation in various observable relations for which it acts as the locus. Definition 2 highlights this functional role by modelling theories in a manner which requires each such definitive relation (type) as well as the involved kinds of entities to be specified. This framing emphasises the instantiator's relational qualities – all the ways in which it is *expected* to relate to whichever entities bestow it its supposed meaning. Thus, the instantiator's material identity is subject to restrictions derived from consistency requiring it to be compatible with its designated position in said sorts of relations. Naming such entities using terms such as 'word' or 'utterance' designates some core identity but consummate material identity is *substantiated* in relation to such theory-specific functional requirements. For instance, whether a broadcast qualifies as one utterance, many, or just a medium for proper ones depends on such details. Some general theory of utterances or the like might pose its own set of identity criteria but it would not change the criteria theories taken as wholes embody. This section discusses the nature of this theory-specificity by considering the theory-internal criteria by which an instantiator is identified.

5.1.1 Minimalist Closure

That meaning must be instantiated somehow – that there must be states of affairs to which it can be attributed or which embody it – is a premise for this section. A notion of meaning removed from any such instantiation appears vacuous since no fact *could* evidence or otherwise ground any claims about such forms of meaning. However, once such instantiators are dissociated from what terms such as 'word' or 'utterance' intuitively designate, new criteria for distinguishing them from theories' total explanatory apparatuses are needed. Naïve understandings do not suffice since the way they capitalise on recognisability masks how theoretically loaded the notions become

when attributed functional roles within a theory. Authors such as Kaplan[1] or Barwise and Etchemendy[2] also provide alternative understandings of such basic notions, and such presence of alternative understandings turns advocacy even for the naïve understanding position-involving. However, abolishing this intuitive boundary entails that some more formal distinction between the instantiator proper and the sources of its meaning must be introduced in its stead. Otherwise, instantiator identity risks extending to incorporate each source of meaning since from the detached perspective from which such analysis is conducted, the whole system is necessary for a given meaning to emerge.

The proposed approach is based on a principle of *minimalist closure* which refers to associating the instantiator proper with the smallest functional unit which suffices for the task the instantiator performs. Identifying said task is a separate issue. Differently oriented analyses might even apply different criteria. However, the underlying reduction to the smallest functionally sufficient unit reveals the *baseline* commitments of a theory relative to the designated criterion. At that level, the inclusion of any involved entities becomes non-negotiable because each is necessary. This crystallises the differences between theories and provides an absolute boundary whereas any intermediate criterion would fail to differentiate between necessary and potential similarities and differences. Even if one had an interest in the potential, distinguishing it would require first identifying the domain of the necessary to be subtracted from the total. Meanwhile, focusing only on necessary inclusions shows the most fundamental differences between theories in this respect such as whether their instantiators should even be considered commensurate in practice.

The exact criterion being applied concerns the minimal unit for expressing whichever forms of meaning analysed theories treat as *basic*. Because the criteria for

[1] '[U]tterances and inscriptions are *stages* of words, which are the *continuants* made up of these interpersonal stages along with some more mysterious *intra*personal stages.' (Kaplan, 1990, p. 98, emphasis in original)

[2] '[O]n the Austinian view all propositions contain an additional contextually determined feature, namely, the situation they are about.' (Barwise & Etchemendy, 1987, p. 29). Immediately prior, the authors refer to designated situations as a *component* of Austinian propositions.

basicness are internal to each theory, they need not be imposed externally in a manner which risks begging the question by being biased either in favour of or against some theories. Regardless, the criterion remains applicable across the board since each theory must identify *some* basic level of meaning. This basic level is effectively the minimal point of closure: anything sub-basic constitutes an incomplete representation of a theory's total requirements for the emergence of meaning. Such components' comparative relevance can then be established once it is established where theories differ overall in terms of involved components.

5.1.2 Basic Meaning

In this context, basicness involves theory-specific criteria for a given form of signifier to function as one. It is not a matter of hierarchy between forms of signifiers such as sentences and words. Within a given approach inclusive of multiple forms of signifiers such as sentences and words, unless they were conflated as subject to the same dynamics, each would possess distinct criteria for what constitutes the base level of their meaning. For instance, some theories may set the threshold for sentence meaning at expressing a well-formed proposition and word meaning at being associated with (sets of) distinct concepts. These are theory-specific criteria even when minimally distinct variants may be shared by multiple theories. Whenever a single approach includes multiple levels of instantiators, it should be treated as a cluster of semi-distinct theories of meaning[3] which are each separately analysable. Even when meanings attributed to forms of signifiers might rely on factors derived from the meanings of their constituents, the latter are not treated as more basic in the current sense. Such circumstances merely require analysing one level before the considerations involved with another may be properly understood.

Basicness is thus to be understood in terms of what a theory treats as basic rather than somehow enriched or developed forms of meaning for each type of sig-

[3] For instance, relevance theory is primarily a theory of utterance meaning as the proposition being intended to be conveyed using an utterance. Yet, Sperber and Wilson (1995) also take a stance on word meaning, identifying it as a concept (or set of concepts for ambiguous words) involving a logical, encyclopaedic, and lexical entry (Ibid. pp. 86–93).

nifying unit. A theory-internal criterion is being applied because theory-external criteria are each either theoretically motivated or judgement-dependent, and either of those features involves *privileging* a viewpoint based on considerations under contention. To illustrate the issue, consider *semantic well-formedness* (Chomsky, 2002) as an example of both.[4] Applying semantic well-formedness would be theoretically loaded since the notion of well-formedness involves structured organisation of distinct elements, but not all theories require strict organisation or even complete demarcability of meaning due to aspects such as its openness to connotation.[5] Additionally, asserting semantic well-formedness – or acceptability which acts as evidence for it – depends on the judgements of people with native speaker proficiency. Yet, whether any particular set of native speakers may spontaneously imagine a context in which a linguistic token could be used meaningfully is subject to contemporaneously available and salient cognitive models (e.g. Stock, 2005). Their judgements are therefore affected by incidental factors, including their degree of familiarity with a theory or relevant scenarios. This inherently disadvantages theories which demonstrate potential avenues for deriving meaning by tapping otherwise non-salient scenarios like Travis's (2008) radical contextualism.[6] The underlying, seemingly generalisable issue concerns how expectations based on prior understanding are required for pinpointing meaning given its insubstantiality, and how such expectations in turn rely primarily on personal experience and theoretical models. The example of

[4] Admittedly, semantic well-formedness is also largely vacuous as a criterion given how it is nigh synonymous with 'meaningful' or 'not nonsensical'.

[5] Garza-Cuarón (1991, p. 3) specifically names semioticians such as Eco and literary theorists such as Cohen and Barthes as examples of treating connotation as 'essential to the analysis of meaning'. Barthes (1974, p. 7), for instance, states that 'others (the semiologists, let us say) contest the hierarchy of denotated and connotated; language, they say, the raw material of denotation, with its dictionary and its syntax, is a system like any other; there is no reason to make this system the privileged one, to make it the locus and the norm of a primary, original meaning, the scale for all associated meanings'. In-context, the implication is that theories *may* treat connotation as part of the most basic meaning attributable to a text

[6] The so-called *Travis cases* include scenarios demonstrating how basic sentences such as 'the leaves are green' (Travis, 1997) can be used to assert different claims which may even have opposite truth values while the facts remain the same. For this example sentence, it matters whether the greenness is understood in terms of visual impression or biological disposition when a Japanese maple's naturally red leaves have been dyed green.

semantic well-formedness shows why being theoretically motivated or judgement-dependent biases evaluations based on a criterion. While all criteria require some such grounding, the seeming plurality of meaning expressed in the variety of available theories makes generalisations across them systematically risk begging the question based on different priorities. Until the universality of some set of criteria is established, theory-internal criteria such as basicness constitute a safer bet.

While basic meaning according to any given theory is defined using theory-internal criteria, basicness itself is universal because each theory of meaning must identify *some* conditions sufficient for meaning-acquisition.[7] Thus, while basicness can be defined autonomously, using primary theory-internal factors, unlike those conditions alone, it grounds meaningful cross-theoretic comparisons. Were primary theory-internal criteria applied in this manner, they would constitute external criteria relative to any alternative approaches, and the aforementioned issue of set approaches being privileged would recur. For instance, radical contextualist theories utilise criteria which differ considerably from others' standards and may even seem to lack a basic level of meaning because context penetrates all the way which precludes any underlying invariant meaning. Yet, even in such cases, the floor is merely being *raised* to include more considerations instead of basicness being eliminated. Consider how Searle (1994, p. 179) argues that '[t]he same literal expression can make the same contributions to the literal utterance of a variety of sentences […] and yet […] the expression will be interpreted differently in the different sentences […] [b]ecause each sentence is interpreted against a Background of human capacities'. In effect, meaning only occurs once the required intentionality is being grounded in specific practices within which things receive a significance through their contribution. Searle's example of 'cut' which is exemplified in 'cut the grass', 'cut the cake', and

[7] For example, one might treat as basic the type of meaning subject to pragmatic effects which require a prior meaning such as implicatures. However, this criterion is merely an example of how to approach basicness within contextualist theories (e.g. Sperber & Wilson, 1995; Recanati, 2002), given how contextual penetration prevents tying basic meaning to preceding *any* pragmatic effects like Borg's (2004, p. 38) distinction between minimalism and dual-pragmatics implies she does. The criterion cannot be fully definitive of basicness, either, as it would primarily apply to (full) utterances.

'cut the sun' (Ibid. pp. 178–180) demonstrates the principle: each activity involves distinct forms of separation, and attributing set significance to cutting the sun requires imagining a scenario which substitutes as background. The variety of such scenarios together with an absence of some actual standard leaves the notion of cutting the sun effectively meaningless within Searle's framework. However, this threshold sets the baseline which can be identified as a form of basic meaning. If meaning ceases in the absence of a linguistic item and its Background, whatever emerges as such minimal conditions are met constitutes the theory-specific basic level of meaning.

The comparisons which linking closure to conditions for basic meaning supports mainly concern how demanding different theories are towards processors of meaning. Once the minimal criteria for instantiating basic meaning have been identified for each in a set of theories, the theories may be ranked from least to most demanding. Assuming that a meaning must be accessible to a definitive set of people such as all users of a term, the majority of them, or only the experts, this ranking is linked to the conditions for accessing whichever factors a theory considers necessary. The more entities are involved and the less accessible they are, the higher the risk of the theory turning infeasible becomes. Since the meanings a theory attributes must remain grounded on actual judgements (even when they do not correspond to them directly),[8] the relevant people must afford access to whichever facts cognising said meanings requires. Proper access to the instantiator – whether exhaustive or not – is part of this requirement since the instantiator provides an anchor for attributing said meanings.

[8] Again, the claim being made is *not* that such meaning must *match* actual judgements of meaning, A theory may well *represent* meaning in a divergent manner or *derive* it from sources unavailable to (most) individuals. However, unless an explanation of the relationship between the phenomenon being addressed – and it appears the experience of meaning, whether first-personal or not, is the primary explanandum – and the results can be provided, it is unclear what purpose the theory even serves. Computational linguistics, for instance, includes a corpus-based approach to language-recognition which tends to operate on statistical tendencies. By itself, such an approach would not constitute a theory of meaning since it only seeks to enable machine-based language-recognition. However, when similar rules are put to serve an explanatory role such as in combinatory categorial grammar (e.g. Gildea & Hockenmaier, 2003; Steedman & Baldridge, 2006), one ought to expect this relationship to be clarified when the explanans is related to the explanandum.

The value of such ranking lies in identifying the priority for assessing theories in terms of parsimony. As Simon (2004, p. 35, emphasis in original) notes parsimony is defined relative to both the data set and the corresponding formula: '*parsimony* is the ratio of complexity of the data set to the complexity of the formula.' As such, the extremes in terms of complexity warrant special attention. Increased parsimony approaches an ideal balance between explanatory power and simplicity: highest explanatory power sets the standard but given equal explanatory power, the simpler option is preferred. This results in parsimony being breached whenever a theory either oversimplifies or overstates explanatory requirements. With respect to instantiators, the most relevant theories for assessing parsimony are therefore the least and the most demanding ones. The more peripheral a theory is in terms of its requirements, the greater the impact of establishing that level as the threshold for one of the factors becomes. Vindicating a theory's claim that the explanatory power of a minimal instantiator matches or exceeds alternatives would prove further criteria redundant, and comprehensive frameworks being proven to require more encompassing instantiators would turn any simpler option insufficient.

5.2 Manifestness

The current discussion is premised on there being a real possibility that instantiators' identities fail to match distinctly perceptible entities such as individual words (recited or written) and utterances. This section discusses the reasons for this assumption and the relationship between instantiators proper and said entities. Theories of word meaning, for instance, appear intended to apply to 'words' in an everyday sense even when they might reconstruct what underlies such impressions.[9] Understanding the difference between such manifest entities and theory-internal full instantiators is required to appreciate the distinction. Specifically, this section seeks to demonstrate

[9] This is a comment about *material* identity. Theories may affix various forms of explanatory apparatuses such as unarticulated constituents (e.g. Perry, 1998; Recanati, 2002) to such entities without *explicitly* extending their material identities. Whatever sets of entities are ultimately required for the material identities of meaning-instantiating entities which are suitable for a theory's explanatory apparatus constitute the full instantiators discussed below. It is merely presumed that authors have more everyday senses linked to manifest instances in mind when formulating their theories.

that is misleading to treat said theoretical constructs as equivalent to these experientially manifest entities. They do act as minimally designated loci which help direct expectations but the systems posited by theories also embody their own conditions for suitable entities. The resulting instantiators are defined functionally, relative to the rest of the system: they consists of *whatever* is necessary for embodying the attributed meaning, given the nature and posited sources of the latter.

5.2.1 Manifest Instantiators

A manifest instantiator is whichever observable entity is designated by the standard use of a term used to refer to a type of meaningful entity such as 'utterance'. In the case of 'utterance', the manifest instantiators would be the immediate products of individual acts of speech, whether recited or written: patterns of vibration registered as word sounds or either visual or tactile patterns which incorporate letter shapes forming words. There appears to exist an intuitive understanding of any meaning-carrying entity named using familiar terminology. Needing to accommodate the variety of cases complicates the provided specification of the entities constituting utterances yet each designated instance remains familiar. This focus on familiar forms demonstrates how inadequate such basic understanding can often be, though. Consider unprinted digital writing. While words do appear on screen whenever the contents are accessed using a program with the appropriate decoder and interface, the act of writing enabling this actually produces changes in the magnetic properties of hard drive disk platters. Only the text resembles what would be considered an utterance by the historic precedent of handwriting and print but the changes constitute the independent, enduring product which embodies the utterance's message.

The evident appeal of manifest instantiators over alternatives involving sets of familiar entities or lack of continuous boundaries matches expectations grounded in categorisational prototype effects (Rosch, 1978; 1981).[10] In effect, people are pre-

[10] '[T]he task of category systems is to provide maximum information with the least cognitive effort; [...] maximum information with least cognitive effort is achieved if categories map the perceived world structure as closely as possible.' (Rosch, 1978, p. 28, 'structructure' corrected to 'structure')

disposed to favour categories which track the forms of differentiation their perceptual systems afford: physical covariation, material continuity or punctuated duration, and so forth. Moreover, the cognitive models representing such categories are derived primarily from available experiences and therefore tend to exclude viable but marginal candidates. Consider the speech act, for instance. A singular person orally uttering words in a near-continuous and contained manner is the assumed norm. Considerations such as whether some act may misfire – i.e. fail to be committed – based on the *quantity* of collective utterers are nigh-inconceivable when such cases are treated as uniquely representative or otherwise normative. Another issue complicated by the dynamics of a collective are abuses, given how they are largely treated as a matter of intention.[11] After all, *some* participants being insincere seems insufficient to corrupt the speech act. Even if the lines are spoken individually, a mutual pledge where any given speaker only *represents* the collective appears irreducible to individuals' speect acts.[12] Possibilities involving discontinuous or indefinitely long or non-traditionally mediated speech acts are similarly left open when the prototypical cases remain in focus. The wider observation this issue illustrates concerns the default understanding of *each* nominated manifest instantiator being *potentially* subject to similar limitations given their susceptibility to contingent prototype effects. The very manifestness of these entities risks such bias which is grounded in affordance-prioritising perception. However, while the resulting recognisability helps categorisation, it does not ensure sufficiency for instantiating each associated form of meaning.

To further demonstrate these issues, consider attempting to designate linguistic tokens demonstratively. Some cases – such as a handwritten instance of 'dog' or saying '[dɒg]' yourself – provide satisfactorily well-defined boundaries for material identity. However, such demonstrative identity being paired with attributing meaning turns the fact that no token may truly be isolated from its surroundings into an issue. Specifically, each token occurs within *some* set of circumstances. While they

[11] Austin (1975, pp. 16–18) largely equates abuses with *insincerity* which is a matter of intention.

[12] Meijers (2007), for instance, discusses the status of collective speech acts and criticises the present individualist bias in speech act theory.

may be in *focus*, stripping all context is impossible. Even ignoring how absence of circumstances is itself a specific circumstance, as situated entities, observers import their own context. Because there exists no possible control group for which context is absent, whenever some designated linguistic token is being attributed meaning, there exists no means to conclusively assert that the designated token rather than the pair it forms with its circumstances suffices to instantiate said meaning. The only way out involves attributing said meaning to a type being betokened since types may be *conceived* independently of context given how they stretch across many while seemingly retaining an independent identity and invariant meaning. Yet, this move invites its own issues such as types' material identities being considerably more contestable because they lack the immediacy of designated tokens.

Linguistic items' type identity[13] is already theoretically loaded (e.g. Kaplan, 1990; 2011; Gendler Szabó, 1999; Wetzel, 2009; Hawthorne & Lepore, 2011), involving criteria ranging from formal similarity (orthographic, phonological, morphological) to genetical or onomastic (Kaplan, 1990), and to statistical (Gildea & Hockenmaier, 2003). However, as Gendler Szabó (1999, pp. 147–148) mentions – citing Davidson (1979) among others – *similarity* is used as a self-evident criterion for word identity. This default position should thus reflect a supposedly theoretically naïve position. Yet, as both needing to bridge the pronunciation-spelling[14] gap and homonymity show, even the naïve linguist is not happy with simple self-similarity for word types.

[13] For purposes of this analysis, linguistic types are given a nominalist treatment: the material identity of the universal is the aggregate of its tokens (Armstrong, 2009, p. 43). Criticisms of the approach come both from type-realists (e.g. Wetzel, 2009) and those critical of either set-based conceptualisation (e.g. Simons, 1982; Kaplan, 1990) or instantiation as the relation connecting tokens and types (e.g. Gendler Szabó, 1999). Simons (1982) prefers a pattern-based approach wherein types are associated with patterns that *may* contain open variables (e.g. pattern '*αα*' would be exemplified by each instance involving two subsequent instances of a single symbol such as '*aa*' but closed patterns are also possible). Gendler Szabó (1999) argues that tokens *represent* rather than instantiate types, leaving room for variation without inviting issues with thresholds or multiplication of types. However, in the current context, this approach need not constitute a metaphysical stance. The treatment of linguistic types is merely a means to identify the totality of associated entities based on whichever principles different theories promote.

[14] While archetypically only vocalisation and standard alphabets are considered, this issue extends to signing, Morse code and braille.

As a result, they must instead (also) invoke expressed concepts. Because the sole function of such an appeal to concepts ends up being to justify preceding judgements of word identity, attempts to reconcile the two intuitions constitute *immunisation* in Popper's (2002b, p. 48, emphasis in original) sense:[15] 'introducing *ad hoc* some auxiliary assumption, or [...] re-interpreting the theory *ad hoc* in such a way that it escapes refutation.' In effect, word identity is defined one way when it is convenient and the other whenever the original criterion would fail but the latter criterion is not generalised because by itself, it would be vacuous. The alternative approach of providing more substantial criteria in support of either approach, on the other hand, turns theoretically loaded and thus fails as a representation of a naïve understanding. More fundamentally, even the very sense of recognisability which grounds the associated sense of manifest identity likely depends mainly on conservatism bias, as the example provided below is intended to show.

Conservatism bias involves resistance to belief revision based on novel evidence. In the case of linguistic types, it would manifest as greater preference for accepting more familiar expressions as sharing an identity in an otherwise inconsistent manner. As an illustration, consider how 'ドッグ' constitutes the proper Japanese *katakana* transliteration of '[dɒg]'. Despite this, one likely has serious reservations about calling 'ドッグ' being instantiated *instances* rather than perhaps representations or parallels to the English word betokened by 'dog'. To speculate on the reasons, explanations for such exclusion would perhaps involve orthographical differences since 'ドッグ' does not map directly to the Latin alphabet and given the symbols being used, would *directly* translate to an utterance of '[do̰g̰g˚ɯ̟ᵝ]'. Any such reasoning turns hypocritical, though, if '*inu*' is treated as an instance of the *same* word as '犬' as is common among English speakers despite this case mirroring the initial scenario. Both conventions *exist* but the former is specific to an *outgroup* relative to most users of English. Hence, the difference appears to involve matters of arbiter identity where only conventions adhering to their expectations qualify as definitive of word

[15] As Popper (2002c, p. 43) notes, the term 'immunization from criticism' was originally others' way to describe what is called 'conventionalist stratagem' in his own work. He embraces the term.

type identity. If the existence of corresponding conventions were the deciding factor, a Japanese author having a character in their written work state 'ジス イズ マイ ドッグ' would involve the use of English words to the same extent as '*kore wa watashi no inu desu*' written by a British author consists of Japanese words.[16,17] After all, were the latter sentence written by the Japanese author, few would question whether it constitutes or merely represents a sentence in Japanese, and the author's identity is not a part of manifest type identity. As such, if type identity being considered manifest depends on such reactive exclusion of any subversive candidates, such manifest identity merely constitutes a reflection of preconceptions which embody non-generalisable and therefore incidental factors dependent on systematic contingencies.

5.2.2 Full Instantiators

Full instantiators consist of the sets of entities which must participate in expressing the sort of basic meaning discussed above based on theory-internal criteria. They must minimally incorporate the core manifest instantiators linked to the terminology a theory uses (e.g. 'word') but their identity conditions are otherwise unconstrained by theory-external conditions. While full instantiators can be specified regardless of whether manifest instantiators can act as a satisfactory standard for instantiator identity, such analyses are made more significant by naïve conceptions' demonstrated inadequacy. Were manifest instantiators' identity conditions near-unequivocal instead, they *could* act as neutral, cross-theoretic standards relative to which any deviation in what specific theories require would constitute breaches. Under such conditions, a theory aimed at 'word meaning' which required the corresponding full instantiators to incorporate utterers' intentions as part of words' identities would fail to properly qualify as a theory of *word* meaning, for instance. Since intuitions about

[16] The *katakana* spell a transliteration of the pronunciation for 'This is my dog', and the Latin transliteration expresses the matching Japanese sentence 'これ わ わたし の 犬 です'.

[17] The Latin alphabet does see some use for Japanese words. Most notably, keyboards and touchpads are designed to translate inputs of Latin characters to corresponding native alphabets (Gottlieb, 2010, p. 77), and there are three official systems of representing Japanese words using the Latin alphabet (Ibid. pp. 78–79). The system of representing foreign words in *katakana* is no less official, though, even if the only native users of said languages who apply the system are specially educated.

manifest identity cannot be eschewed, they remain part of *necessary* identity conditions. However, their inadequacy leaves the extent of *sufficient* conditions open-ended. Under *these* conditions, each theory's take on full instantiator identity instead presents a candidate to be accepted as a general category of signifiers. Whether such candidates qualify depends not on the manifestness of the designated entities but on their utility – either as familiar terms' proper referents or novel concepts.

As an example of restrictions entailed by a theory's details, consider how Kaplan (1990, p. 95) speculates that Kripke's (1981) causal theory of names implicitly requires words being understood causally rather than orthographically – as parts of a continuum originating at the initial baptism. According to this common currency view of word identity which Kaplan (1990, p. 98, emphasis in original) promotes, 'utterances and inscriptions are *stages* of words, which are the *continuants* made up of these interpersonal stages along with some more mysterious *intra*personal stages.' Thus, when discussing distinct words, a causal theorist would be treating such branching causal pathways (or at least their concurrent participants) rather than the total set of matching patterns as the proper instantiator. The variant involving orthographical word identity would need to differentiate between mutated expressions (e.g. pronunciation of 'ration' going from [ˈɹeɪʃən] to [ˈɹæʃən]). Given Kripke's theoretical apparatus, this view would likely need to treat first instances of such mutations as novel initial baptisms.[18] This move would in turn rob the concept of its explanatory power by removing any constraints on applicable situations involving novel expressions. A baptism occurring would no longer depend on the presence of set mental states, for instance. However, if there remains a sense in which orthographically specified word

[18] 'An initial baptism takes place. Here the object may be named by ostension, or the reference of the name may be fixed by a description. When the name is "passed from link to link", the receiver of the name must, I think, intend when he learns to use it with the same reference as the man from whom he heard it.' (Kripke, 1981, p. 96). Thus, were the name in question linked to exact form of expression, a changed expression would be best described as another initial baptism whereby the object is denoted using a description referencing the object of the preceding form of expression. Thus, '**[ˈɹæʃən]**' would name 'the object named by **[ˈɹeɪʃən]**'. Given how such descriptions would largely be provided after the fact and from the outside because most linguistic mutation is incidental, an orthographically based causal theory of names would turn vacuous. After all, no fact internal to an event suffices to invalidate such *post hoc* external descriptions.

type identity undergirds some form of meaning distinct from what a causal theory explains,[19] even if one subscribed to the causal theory of names, one may also specify word identity along orthographical lines in another context. The principle is effectively the same as between contextually viable taxonomical principles for speciation (e.g. Dupré, 1993, pp. 26–34): different categorisation schemata suit different purposes.

Because word choices for naming the relevant instantiators (e.g. 'word') do in part help specify them, full instantiators remain seeded around associated manifest instantiators. Given its relation to experience, meaning cannot be isolated from manifest instantiators regardless as their presence *prompts* attributing any meaning in the first place. Even when manifest instantiators may not suffice, they remain necessary. Hence, each full instantiator of a named kind ('word', etc.) must at least encompass the minimal, uncontentious presence ascribed to the associated manifest instantiator. Such minimalist definitions might not qualify as theoretically naïve proper understandings given how they merely *omit* all issues in the periphery, but a shared *requirement* should be kept minimal. Thus, for instance, whatever conditions a theory ultimately embodies for the material identity of 'words' (in the type-related sense), in using that term, the author is minimally designating at least the sets of tokens co-associated with a shared word identity (each instance of 'dog', '[dɒg]', etc.). While a required full instantiator might therefore *exceed* the minimal manifest instantiator, meaning remains associated with the presence of said kind of entity.

The methodology for extracting full instantiators employs the relations which involve the instantiator within a theory-specific model. Among said relations, some are treated as meaning-bestowing and have the instantiator or parts thereof as their object. Others specify what entities are involved in expressing (basic) meaning and thus have the instantiator as their subject. For instance, a deferential semantic ex-

[19] For example, terms with shared referents may differ in tone or connotation. Consider 'disabled' relative to 'handicapped', for instance, in the sense both terms share. Both are used to denote people who would struggle to perform some standard actions unaided because of a distinct bodily (including neural) difference relative to the norm. However, the former connotes the absence of ability or even negative ability to perform while the latter is associated with added challenges which merely complicate rather than prevent performance.

ternalist (e.g. Putnam, 1975) treats subject-specific, communally authorised experts' declarations as definitive of word meaning. The resulting relation connects a posited type or unique entity to the expert's epistemic state (internal or extended) and an appropriately positioned betokening of a linguistic pattern (and associated entities) within their declaration or set of declarations.[20] The *pattern* is the recipient or object of the complex relation and deferential externalism attributes it a corresponding meaning. Thus, the definitive relations specific to the deferential externalist approach should specify corresponding full instantiators orthographically.

5.3 Extraction Methods

Isolating theories' full instantiators using the structuring which models based on definition 2 embody involves five main steps. The first two have already been mentioned. One should first specify a minimal manifest instantiator based on the terminology used to refer to the relevant kind of instantiator within a theory. One should also identify what the theory treats as the basic form of meaning for said kind of entity. This can also be done afterwards to sift through all recorded relations and informed by the available selection but access to said guiding principle helps focus textual analysis. This sub-section focuses on the remaining three steps. Firstly, while browsing the relevant corpus, one must identify mentions of the processes which engender meaning and identify the associated relations being posited. Ideally, the same should be done for processes resulting in meaning being experienced. These relations help restrict the possible instantiators based on which kinds of entities fit the relevant

[20] The classic example is the (simplified) claim that 'water is H_2O' in which 'water' is positioned such that being (identical to) H_2O is predicated of it. The definition of 'H_2O', one assumes, relies on similar specifications for its constituents, the referents of which are ultimately designated non-verbally. Given the floor manifest instantiators set, '[ˈwɔːtə(r)]' would also be included. Further, whether contested instances such as the *katakana* transliteration '*ウォーター*' become included would assumedly be decided on by experts of related fields. Though, such matters appear even less grounded outside just arbitration in a manner which presents the expert more as an interpreter with *trained judgement* (Daston & Galison, 2007, Ch. 6) than an observer of categories true to nature (Ibid. Ch. 2) as presented by Putnam (1975). Notably, of course, both views of objectivity involve *judgement*, as opposed to the more *mechanical* notions which currently dominate much of science. While this feature does not disprove deferential externalism, it may diminish the view's attractiveness since expert views would lack their directly fact-based epistemic superiority.

positions. The next step involves relating the resulting *affordances* to the set of entities which the relevant *situations* afford in turn. This helps substantiate the instantiators by tying them to specific constellations of available entities – should there be any which match the entailed criteria. Finally, one should double-check whether any of the designated entities are involved in relations which would complicate matters. The result of this process is a detailed, tractable representation of the full instantiators a theory necessitates.

5.3.1 Laying Groundwork

One analysing how a given theory treats 'words' or 'utterances' must first denote the corresponding minimal manifest instantiator. This floor for physical identity helps save the phenomena, and it provides a point of focus around which the full instantiator can be specified. For utterances, for instance, the *minimal* core unit appears to be whichever substrate betokens language – whether vocalised, inscribed, or gestured. Claims such as that the utterance is essentially the product of a creative subject (Bakhtin, 1986, p. 84), as opposed to the language *replication* of a machine, for example, would *enrich* this minimal position but should be bracketed. While such enrichment leads to better-defined sets with fewer contestable cases (such as computerised error messages[21]), any additional criteria such as intentional production materially extend the corresponding minimal instantiator which undermines its purpose.[22] The minimal manifest instantiator need not be the *ideal* representation of what a term such as 'utterance' denotes. Its purpose is to provide a floor which directs how the distinct further criteria specific theories embody are applied. Effectively, the domains for applying said criteria are centred on the relevant minimal manifest instantiators. The

[21] The message has been written by a person but it being uttered by them in that instance (or constituting a part of an ongoing utterance embodied in the code) is controversial. On the other hand, excluding the message from being an utterance also entails conditions involving direct interaction with an intentional agent or the like.

[22] Attempts to rigorously define 'utterance' relative to dialectic theory have been made, for example, by Bakhtin (1986) as well as Haye and Laraín (2011). More analytic meaning theories appear content to treat utterance identity as given.

same is true of the minimal manifest instantiators designated by 'word' (either as a token or type), 'sentence', and so on.[23]

Since the *manifest* instances define the minimal manifest instantiator and since the inclusion of said minimal instantiator should be shared across applicable theories, the method for identifying them ideally has both a phenomenological and an interpersonal aspect. Personal experience of what entities embody specific kinds of meaning *grounds* such analysis but one's experience ought not to be generalised without evidence of others' conceptions of such instantiators sharing said minimal components. In practice, answering these demands would likely involve freeform surveys to avoid anchoring people's opinions when the question is one on which they will have hardly reflected.[24] More structured surveys risk the listed options priming people to mainly consider those alternatives.[25] At its simplest, such a survey might consist of the question 'What elements constitute an utterance?' with further tasks asking people to list the components of written and articulated utterances as checks on the reliability of their answers and support for categorising said answers. Because categorising answers to open questions relies on interpretation and good judgement, the full data set should be made available for review. Lacking such evidence, available examples are merely hypothetical illustrations of the concepts at play.

[23] While the set of entities to which the minimal criteria apply including controversial instances is not an issue for utterances which are tokens rather than a type, a type-specifying notion such as 'word' – when used in that sense – would be properly constituted by the set. Thus, the criteria for type-instantiators should be restricted to the prototypical cases and may then be extended beyond that minimum to cover more instances through theory-specific criteria.

[24] 'Closed questions with pre-coded response options are most suitable for topics where the possible responses are known. […] Open questions should be used where possible replies are unknown or too numerous to pre-code.' (Kelley et al, 2003, p. 263). Vinten (1995, p. 28) concurs by listing as advantages of open questions 'freedom and spontaneity of the answers', 'opportunity to probe', and '[being] useful for testing hypotheses about ideas or awareness'.

[25] 'It is hazardous to pose a closed question where the respondent has not yet formulated an opinion clearly. It is likely to lead to an initial reaction which could be quite different from that which would transpire if the respondent were motivated and assisted to think through and express an opinion on the topic. The respondent will need to go through the process of recall, organization and evaluation of experience.' (Vinten, 1995, p. 29). Specifically, the issue is how closed questions prompt no reflection to retrieve options because those available need only be recognised.

Where specifying the minimal manifest instantiator helps define a floor for the theory-specific full instantiator, identifying what the theory treats as the basic level of meaning provides minimalist closure conditions for the ceiling. Using this criterion, the instantiator proper is differentiated from the total system responsible for the emergence of meaning. The real issue lies in specifying a method by which a theory's commitments in this regard can be *systematically* identified. The form of meaning a theory treats as basic need not always be the most impoverished but recognisable kind of meaning associated with the relevant instantiators. Instead, some theories might associate basicness with the total content which is retrieved by default (e.g. Jaszczolt, 2016) – without conscious effort – or even with external definitions available to select few processors. In the absence of hard and fast rules, only *indicators* for theory-internal basic meaning can be designated.

Firstly, the most obvious evidence is the focus of discussion within the theory – or the balance thereof. Relevance theory (e.g. Sperber & Wilson, 1995; Carston, 2002), for instance, admits the presence of encoded meaning in concurrent means of communication and treats it as an *influence* to be aggregated for relevance-based inferences which yield the *functionally* basic meaning for communication.[26] The two foci within relevance theory are the *explicature*[27] and the total message involving both explicature and *implicature*.[28] Given the choice between these two foci, since implica-

[26] 'The code model and the inferential model are each adequate to a different mode of communication; hence upgrading either to the status of a general theory of communication is a mistake. […] [V]erbal communication involves both code and inferential mechanisms. In trying to construct an adequate description of these two types of mechanism and their interaction, it is important to realise that they are intrinsically independent of one another, and that communication in general is independent of either.' (Sperber & Wilson, 1995, p. 3). Notice the recurrent use of 'adequate'. That meaning may be encoded and that this data can partly underlie what meaning becomes derived is not being denied but said kind of meaning is being treated as functionally inadequate as the basis for a general model.

[27] The explicature is 'an explicitly communicated assumption' (Sperber & Wilson, 1995, p. 182) of an utterance, wherein being explicit equals being a 'development of the logical form encoded by [the utterance]' (Ibid.). A logical form, on the other hand, consists of the aspects of an utterance by virtue of which it is admitted to participate in logical relations (Ibid. p. 72).

[28] 'Any assumption communicated but not explicitly so, is implicitly communicated: it is an *implicature*.' (Sperber & Wilson, 1995, p. 182, emphasis in original). However, since the explicature is not

tures are partly reliant on the explicature and may be absent, considering explicatures the basic option seems reasonable. Secondly, one may dissect how the material addresses (its representations of) alternative theories. Namely, if rival conceptions are called 'inadequate', 'insufficient', or 'excessive' – or otherwise quantified relative to the promoted view – then relating such mentions to how said alternatives are being characterised and the reasons being provided for such claims helps outline where the threshold is being set. Relevance theory, for instance, contrasts itself with both code-based models of meaning in communication (e.g. Chomsky, 2002; Borg, 2004; 2012) and inferential models which Sperber and Wilson (1995, p. 2) associate with Grice (1989) and Lewis (1979a). Thirdly, one occasionally finds a rather explicit formulation of what the basic level of meaning is supposed to be. For instance, Borg (2012, p. 3) whose minimalist approach specifically attempts to carve a niche for invariant semantic content states: 'According to minimal semantics, natural language sentences mean things, the things they mean are in some sense complete (that is to say, they are propositional, truth-evaluable contents), and these literal meanings are determined entirely as a function of the lexical elements a sentence contains together with its syntactic form.' It can thus be predicated of the basic meaning of whichever full instantiator might correspond to a 'natural language sentence' in this sense that it is propositional and therefore conceptual, that it is truth-evaluable, and that each effect on it must be mediated by lexical or syntactic aspects of the instantiator.

5.3.2 Relations' Affordances

The nature of the required full instantiator depends largely on what forms of entities *may* participate in the necessary relations in its designated role. One must therefore index the relations in which a theory includes its intended recipients for meaning and their positions within said relations. The two significant forms of relations involve either being the object of meaning-bestowing relations or being the subject of meaning-expressing (or -conveying) relations. To illustrate, assume that the instantiator

fully retrievable and may require inference, unlike in Grice's (1989) work, the implicature is not identified as whatever is inferred about an interlocutor's intentions based on an utterance.

a contextualist theory posits must both be (1) the object (*y*) of a relation wherein the utterer intends to produce it ('*x* intends to produce *y*') and (2) the subject (*x*) of a relation where it expresses a specific content to the interpreter ('*x* signifies *y* to *z*'). A contextualist theory treats any such content subject to *some* contextual factors and therefore, the latter relation cannot be fulfilled *solely* by a sound pattern the utterer produces directly. However, intentions to produce instantiators are not restricted to willed acts of producing sound patterns. Assuming that intentions *need* not be identified with discrete mental states with contents transparent to the subject (e.g. Paul, 2012; 2015), one may specify the content of an intention leading to an act in various ways.[29] Thus, the two defining relations' demands can be reconciled when *y* in '*x* intends to produce *y*' is understood as an event or state of affairs which encompasses the relevant facts – *including* the person having produced the sound pattern. The minimal instantiator with which each posited relation is compatible would therefore minimally extend past the mere sound pattern to include a set of contextual elements. The full instantiator would need to be specified as a state of affairs which encompasses such elements, each defined with a suitable level of generality.[30]

[29] 'Since a single action can have many different descriptions, e.g. "sawing a plank", [...] "making a great deal of sawdust" and so on and so on, it is important to notice that a man may know that he is doing a thing under one description, and not under another.' (Anscombe, 1963, p. 11)

[30] For instance, since most contextualist theories involve free pragmatic enrichment, the kinds of components involved would need to be formalised in theory-specific ways. Hall (2014, p. 16) attempts to resolve the alleged issue that free enrichment over-generates content by restricting it to *local* rather than *global* inferences, except when the premises independent of the logical form of the utterance are immediately relevant (e.g. location for 'It's raining') (Ibid. p. 22). (The difference between local and global inferences is based on whether the total content of what is said or merely some fragment is used as a premise for pragmatic inferences.) Thus, while Hall does not directly address the principle(s) by which the appropriate context is specified, her response provides two disparate conditions – local inference dependent on (1) logical form or (2) immediate relevance – which embody an underlying principle. In relevance-theoretic terms, the associated facts are highly manifest: the *degree* to which they can be entertained as factual through perception or inference (Sperber & Wilson, 1995, p. 39) is *heightened*. Specifically, the manifestness of such data appears linked to immediate presence, given how being presented with the utterance itself grounds its developments and what is being observed directly is generally readily cognised. Thus, characteristic degree of manifestness could be used as an example principle: Some facts in a communication situation are naturally manifest beyond a critical threshold (e.g. produced sound waves) and the rest can be categorised based on their likelihood of passing the threshold based on their features (e.g. 'the attendable' as prototypically unobstructed manipulatable objects).

The primary problem is *defining* the affordances characteristic of each involved kind of relation. This issue is aggravated by how some of the relations involved do not necessarily have recognised names to which prior senses can be attached. However, such cases are treated here as a special case of the larger issue and not inherently more problematic besides the associated analyses lacking the background more familiar cases invite and needing to be supplied with more extensive discussion as a result. In either case, the basic issue involves systematically delineating which forms of entities may in *actuality* (rather than in principle) occupy each position in a given type of relation – possibly in ordered sets rather than each being able to pair with any entities viable for the other positions. Thus, given a relation such as '*x* signifies *y* to *z*', one must identify the features enabling an entity to participate in the role of *x*, *y*, or *z*. The instantiator in this instance would be defined relative to *x*.

In discussing affordance-based ontology, Sanders (1997) suggests treating affordances as ontological primitives rather than dispositional properties dependent on more primitive existents.[31] However, since such an approach limits verifying the presence of affordances to direct epistemic means – namely, *observation* – and blocks treating other facts as sufficient evidence for them, it would be unfruitful for current purposes. Should Sanders be vindicated, though, the best available option becomes analysing the affordances of different relations on an individual basis, and that would become a necessary part of the process. To explore the other alternative in hopes of a more systematic and prescriptive approach, one should consider affordances *incurred* dispositional properties defined relative to both sets of properties attributable to specific entities and the space of possibilities they inhabit. Sets of properties rather than properties as such define associated affordances since some may interact in affordance-entailing ways (e.g. elongated appendices only allow grasping given ability to curl with enough grip strength, but their lengthiness is equally crucial). The inhabited space of possibilities – a defined domain within the realm of pos-

[31] '[…] I argue that a much more promising approach takes affordances themselves as ontological primitives, instead of treating them as dispositional properties of more primitive things, events, surfaces, or substances.' (Sanders, 1997, p. 97)

sible states of affairs that may inhabit it[32] – are included since affordances are *relative* rather than *inherent*.[33] Each is properly specifiable only given the possibility of *interaction*. Thus, for instance, grasping behaviour can only be defined in the presence of what the entity can or could grasp. A human hand in an otherwise liquid or gaseous world cannot afford grasping anything.

In a sense, when conceived as part of a space of possibilities, relation types are capable of limited *behaviours*: they may compile when applicable or fail to apply.[34] For current purposes, the relevant space of possibilities may be conceived as sets of scenarios not dissimilar to the *abstract situations* of situation semantics (Barwise & Perry, 1999, pp. 8–9) – arrangements of (prototypically represented) genera – being approached from the outside. This external position allows relating relation types *across* such situations which provides the variable (allegorical) *environment* relative to which the relation type may react differentially. Namely, in being conceived thus, the relation type is enabled to exhibit adherence or aversion. From a perspective internal to the scenarios, the relation type may only be *found* present or absent. However, this description is only detailing the sense in which the worldly, action-oriented notion of affordances applies to relation types which are generally considered detached and static instead.

5.3.3 Syntax-Compatibility

An illustration of identifying relation-specific affordances based on a tentative analysis of the role of syntax in minimal semantics is provided below. The case is interesting since Borg (2012, p. 4) *minimises* the available influences on minimal semantic mean-

[32] Wittgenstein's (1921) notion of *logical space* (Glock, 1996, pp. 220–223) comes close, though in this context, the space of possibilities is primarily defined relative to *real* rather than *formal* (or logical) possibility (Gibbs, 1970).

[33] While the notion of an *effectivity* – the subject-side complement to an environmental affordance – has been proposed by later Gibsonians, Sanders (1997, pp. 103–104) points out how this concession to the subject-object distinction wastes what makes affordances ontologically interesting.

[34] Behaviours continue to be treated in terms of intentional systems theory (Dennett, 1971; 1987): all activity counts as behaviour, and intentionality is but one explanatory framework. Please note how these behaviours are attributed to relation types which are being *conceived* rather to some objective, abstract entities.

ing: 'Semantic content for a sentence is fully determined by its syntactic structure and lexical content: the meaning of a sentence is exhausted by the meaning of its parts and their mode of composition.' Since the meaning of said parts – mainly words – is treated as (largely) invariant, while minimal semantics is primarily a theory of sentence meaning, it must also present (or reference) a suitable theory of word meaning. The contribution of word meaning is not addressed here. Instead, the example concerns the relations necessary for syntactic structure – modes of composition – to contribute towards set meaning. As outlined above, the task involves (1) considering the conditions under which such contribution becomes possible, (2) identifying the key types of entities, and (3) analysing at least some of the relations linking sentences to such enablers.

In general, syntax consists of the combinatorial patterns of lexical items which modulate the structure of interpretations (e.g. Tallerman, 2011). The main explanations for the emergence of syntax are *Universal Grammar* (e.g. Chomsky, 2002) and *Constructivist Grammar* (e.g. Langacker, 1987; 1991). Broadly speaking, the former posits evolved, innate restrictions on possible grammar while the latter explains the same invariance using ecological factors during development such as perceptual and attentional affordances. Borg (2004, pp. 80–85) certainly considers syntax mental – indeed, modular in the Fodorian sense – rather than socially constructed. On the issue of innateness, she states (Ibid. p. 6) that the relevant processor is innate in the sense that its functions are not *learnt*. Thus, while Borg may not be *strictly* Chomskian in this respect, syntax being tied to universal grammar provides a framework within which its conditions can be approached. Specifically, this affinity would minimally extend to a shared rationalism in Chomsky and Katz's (1975, p. 74) sense of structures enabling language acquisition being 'conceived as an innate schematism that determines the scope and limits of knowledge of languages'. In virtue of being innate, such syntactic schemata must operate within pre-specified parameters. To have the explanatory role Borg attributes to them, they must also be universally shared since minimal semantics focuses on general rather than individual interpretations of linguistic form. Thus, there must be some neural structures – possibly

multiply realisable but within evolutionarily defined confines – which embody the templates enabling one to recognise syntactically sound (linguistic) structures. The presence of such structures (and their necessary enablers) is the minimal condition enabling mentalised syntax.

Thus, the structure of accessed, lexically realised (given the other condition) instantiators becomes syntactic in relation to the appropriate neural configuration. The relevant relation connects this brute structure and the associated neural apparatus. Just calling said relation 'correspondence' would be vacuous, though. What exactly occurs depends partly on the pervasiveness of top-down processes in perception since it determines the point at which the schemata are applied and whether this precedes experience. If Borg's focus on information encapsulation extends not only to language processing (Borg, 2004, pp. 89–90; 2012, pp. 12–13) but to perceiving utterances, any application of prior information must be module-internal.[35] For the sake of this illustration, let language perception be treated as encapsulated.[36] In this case, the relation would be one where the corresponding module-internal structure responsible for syntax-checks *matches* incoming data of the linguistic patterns to available templates for well-formed syntax. Since syntax concerns pattern-recognition, it appears this relation involving the neurally realised module therefore applies to *whatever* structure implements suitable patterns.

The question then becomes what affordance-defining features the relation of matching with neurally implemented syntax templates involves. Two such features stand out. The first is *seriality* and the second *lexical affinity*. While non-serial syntax

[35] See Appelbaum (1998) on how Fodorian modules could accommodate data on top-down processing in language perception. She recounts the possible ways in which Fodor's (1983, pp. 76–86) suggestion that the relevant evidence is compatible with encapsulation could be realised. Appelbaum concludes that such a project would be unviable, though, since grammatical information would need to be replicated wholesale between modules and the language perception module would need to account for an indefinite number of environmental variables such as background noise and lexical expectations.

[36] Borg (personal communication) has clarified her position to be that language is only processed modularly after context-sensitive disambiguation (e.g. whether 'vice' is being used to refer to a tool or a reprehensible pattern of behaviour). The example thus instead applies to a hypothetical form of semantic minimalism wherein language perception is also treated as encapsulated.

is *conceivable*,[37] the grammatical rules which apply require serial ordering. Thus, while Borg's criteria of lexicality and possessing syntax could be extended to novel syntaxes, under current conditions, the pattern the relevant instantiators exhibit must be serially orderable relative to the sub-patterns associated with at least lexicon-adjacent items. This is only part of the reason such lexical affinity is required, however.[38] Lexical affinity denotes morphological parity within the parameters a lexicon sets. The lexicon proper is being incorporated for simplicity's sake. Effectively, whatever the underlying neuroanatomy for catching linguistic cues (verbal and written) may be, relative to human perceptual capacities, the sorts of sounds and inscriptions people use to communicate consist of patterns not otherwise present in people's environments. Thus, observable patterns which fall within this unique range are suitable to be processed as though they were lexical in absence of prior access to an existing lexical entry for them. Syntactic matching requires such lexical affinity because algorithmic matching of the sort to which a module would be restricted may only act within strict formal constraints.[39] This loosened condition is used instead of strict lexicality because requiring prior association with a lexical entry detailing available grammatical roles would risk trouble with language acquisition and neologisms.

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[37] Such non-serial structure might involve concurrently presented visual blocks which have syntactic units based on relative angle rather than serial ordering, for instance. Within such a system, the meaning of a single unit might be multiply modulated since angles are non-exclusive, making the equivalent of 'glue', for instance, possibly act as both an active verb and a noun *simultaneously*.

[38] The issue being resolved is how no structure is associated with only a single pattern and indeed, each can be specified to contain an indefinite number of patterns within a specific frame of reference (e.g. McAllister, 2010). For instance, consider a sheet of paper dotted only where the corners of a grid would lie. In one sense, there is just this pattern of equidistant, orthogonally ordered dots but this *description* is no more valid than identifying the pattern as equidistant spots on equidistant diagonal lines relative to the edges of the sheet or even an angular spiral pattern with specifiable termination conditions. Thus, for the relevant pattern to be considered serial for purposes of syntactic processing, its seriality must be grounded in some other point of reference.

[39] Assuming that this principle is sound, censoring words actually appears to present an interesting challenge to modularly realised syntactic processing. It is common practice to replace offending words with non-human (or at least non-word) sounds such as mechanical bleeps or humoristic sound effects. Clearly, however, people still understand the grammatic role of the word for which the bark stands in instances such as 'Oh, just [woof] off.' Therefore, either suitable inputs seem lax which brings to question the modularity of the process or contextual inference either precedes or coincides with syntactic processing in which case it is certainly not encapsulated.

5.3.4 Situational Candidates

Once a full instantiator has been outlined by combining the restrictions which each definitive relation specific to a theory entails, this outline can be related to the elements present in relevant situations. Such situations include those appropriate for the sort of theory under analysis: a theory of meaning in communication would be related to the range of communication situations, and a theory of sentence meaning to situations in which sentential meaning manifests. Applying the set of conditions in this manner *substantiates* what entities would actually constitute the instantiator. Prior to the application, the outline only consists of the abstract conditions derived from the relevant relations such as an entity targeted by ostensive demonstrations needing to be directly observable.[40] The task itself amounts to constraining the space of possibilities relative to which the relevant affordances are defined to only the scenarios wherein said relations may engender the intended form of meaning. Even though each particular situation is unique, they are typified by the presence of certain sorts of entities which may either be defined categorically or functionally, and relating the identified conditions to such situation templates helps check the range of available material identities.

To develop on the above example on a more speculative note, one might consider what sorts of entities present in situations which invite language processing fit Borg's (2012, p.4) criteria. In most such situations, the evident answer involves *only* the manifest written and spoken utterances which instantiate the relevant lexico-syntactic patterns. However, because of the involved neural implementation, the initial criteria are slightly misleading. While syntax from an external point of view requires seriality and lexical affinity, Borg is addressing the products of meaning becoming processed. Input-encoded seriality and lexical affinity satisfy the systems responsible as there exists no second order monitoring channel and these features may there-

[40] Borg (personal communication) suggests that examples where an ostensibly demonstrated object acts as a metonym for an unobservable entity might disprove the principle. Her example is 'that painter' being uttered while their work is gestured towards. It seems reasonable to think that in such cases, the object is still being designated and the author becomes the referent through whichever further relation underlies the metonymy.

fore be either *simulated* or *occurrent*. In other words, insofar as the immediate input from associated systems (e.g. baseline hearing module under the Fodorian paradigm) matches what perceived serial (near-)lexical patterns would entail, whether the corresponding pattern *occurred* is irrelevant. Since Borg is addressing sentence meaning rather than utterance meaning, available instantiators are not *limited* to any external manifest instantiators. Such external instances remain viable candidates but hallucinatory sentences, for instance, are also sentential. Thus, since lexicality appears to make no difference in this respect, linking meaningfulness to syntax and lexicality would define instan-tiators which can also be substantiated by hallucination-inducing internal states.[41] In contrast, a theory of sentence meaning incorporating a more *social*, externalist theory of word meaning such as Putnam-style deferentialism (e.g. Putnam, 1975) would at least superficially avoid this specific implication even if the corresponding instantiators might subvert expectations in other ways.

The remaining step is double-checking whether interpreting the original material in light of the results engenders further adjustments. One should once again focus on the relations in which the designated instantiators are participating. This is mainly a means of assessing intra-theoretical coherence and an opportunity to adjust the results as needed in case one had overlooked a key relation which would restrict applicable instantiators even further. If the results have unreasonable implications such as each instance requiring a factually demanding and rare state of affairs, for instance, this phase helps confirm or disconfirm such issues. Should the results need to be adjusted because of some overlooked consideration (which might only apply once previously seemingly uninvolved entities become integrated into the instantiator), this step should ideally be repeated until a stable identity is established. In this respect, the step is self-explanatory: you are effectively testing an initial hypothesis and iterating based on the results it yields until a satisfactory fit is established.

[41] This speculation is hardly authoritative since whether the relevant corpus includes other qualifiers has yet to be studied. Avoiding this implication would also only require some independently motivated addenda from Borg regardless should she find it troubling. Depending on one's priorities, the feature is either a boon which extends explanatory power or an issue to be remedied.

5.4 Takeaway

When a theory of meaning is framed as involving a posited set of influence-defining relations around some central kind of entity which it treats as meaningful in the sense the theory is addressing, it helps view said central entities from the perspective of their functional role alone. These entities – the instantiators of meaning – must be constituted by sets of available elements minimally required to participate in each kind of relation being posited in the appropriate position. Even when a familiar term such as 'word' is used to denote an instantiator, the rest of a theory imposes a distinct set of conditions which specify the full material identity being required of the entities suited for said position. Incorporating the manifest instances of what such terms refer to is necessary but not necessarily sufficient. Establishing the conditions for sufficiency requires accounting for the demands of the relevant relations.

If an everyday understanding of linguistic items is not enough to identify the proper instantiators for whichever kind of meaning a theory posits, one must find some principled way of separating instantiators proper from the total states of affairs responsible for meanings according to a theory. However, the principle must be neutral across the range of theoretical commitments instead of privileging any sub-set of theories. Minimal closure linked to theory-internal conditions for basic meaning provides just that. The resulting instantiators are the simplest entities which the theory may treat as meaningful in themselves rather than as contributing to meaning. As a result, once the corresponding entities have been identified, they may be compared across theories in terms of parsimony. If the sort of meaning a given instantiator would suffice to express covers more of the phenomena associated with whichever task the corresponding theory attempts, it inherits such greater explanatory power. Yet, given equal explanatory power relative to a task, the simpler instantiator ought to be preferred.

After the basic level of meaning and the set of relations associated with it have been identified alongside an uncontroversial baseline identity associated with the manifest entity being named (e.g. 'word'), full instantiator identity is derived using

the requirements of said relations. The entities involved must afford to participate in the necessary relations in their designated position and they must be available in all relevant situations. For instance, (contextualist) theories of communicated meaning might require either that idealised processors interpreting a message have access to the utterer's intentions or grounds for reconstructing such intentions. From the interpreter's perspective, there are no suitable grounds of attributing meaning in the absence of whichever a theory requires. Entities suited for this relation of being available to the interpreter in a certain way must be identifiable in each relevant situation, and together with the manifest utterances, they would constitute the full instantiators for *those* theories. The text can then be read with such initial results in mind to determine whether they invite further relations to consider.

While there are no satisfactory pre-theoretical understandings of the proper material identities of manifest instantiators, it is possible full instantiators identified in this manner could prove to largely cohere with expectations. Any given theory's demands could also prove to have unanticipated results. This method provides the means to systematically extract such details instead of coherence with intuitive judgements being taken on faith. Once results begin accruing, any differences in competing theories' requirements can be assessed accordingly. Different models have different benefits relative to which associated theories can be assessed, and perhaps the instantiators of seemingly competing theories are different enough for both kinds of meanings to co-exist across partly overlapping but distinct instantiators. The method provided here is intended to highlight this possible avenue of further study and to outline one possible means of approaching it.

Chapter 06: Scope

Scope expresses the extent of the domains within which a theory's principles operate. It consists of variable distances along the directions afforded by spatial, temporal, and modal dimensions. Scope may either be relatively static or subject to adjustments based on some further principle(s) such as processors' epistemic limits. Distinct forms of scope express what a theory implements, its potential range, and its target ideal.

The three dimensions along which scope varies each possess distinct directions and corresponding factors relative to which distance is measured. Spatial distance measures separation from the instantiator. Temporal dimensions include the past and the present. Modal scope varies along axes of differentiation where distance is measured by aggregating corresponding vectors for quantifiable individual changes.

Three different forms of scope which may be specified for each theory. Implemented scope consists of the full extent of considerations expressed within the corpus and inherited by how the theory is conceived. Potential scope expresses the range a theory's definitive principles afford before producing deviant results, and ideal scope is the proper minimum extent of considerations a given task requires.

Implemented scope corresponds to the positions of the elements available from the detached observer position within a theory. Extracting potential scope involves finding the point at which applying the proposed principles would result in influences which no longer adhere to the standard a theory applies. Ideal scope is task-specific.

6.1 Aspects of Scope

Besides instantiator identity, the other detail which applying the proposed framing highlights concerns the extent of the domains characteristic of different theories of meaning. Consider the role of such domains. In the absence of a domain, there are no available entities to act as influences. Treating the relevant domain as unlimited does *not* constitute such an absence. Rather, such domains would be all-encompassing – but nothing compels one to *only* apply all-encompassing domains, and conceiving them in practice involves its own limitations. The proper extent of domains being contested is one way to understand the disagreement between Austinian (e.g. Austin, 1950; Barwise & Perry, 1999; Recanati, 2000) and Russellian (e.g. Russell, 1905) semantics. The former treats the domains relative to which meaning is defined as being bounded – *situational* – while the latter applies to consummate *worlds*.[1] While the Russellian approach may seem all-encompassing, even its applications generally eschew the future as a viable source of contemporaneously applicable influences – unlike temporal externalism (e.g. Jackman, 1999; 2005). *Scope* expresses the characteristic extent for theory-specific domains within which influences on an instantiator's meaning are aggregated. As this chapter illustrates, it has various key aspects and each theory may be analysed relative to at least three kinds of scope: implemented, ideal, and potential. Where instantiators match attributed situations' core entities, scope – especially implement-ed scope – appears dependent on the limitations of associated observers.

This section details the various aspects which forms of scope appropriate for theories of meaning involve: (1) the relevant *dimensions* (spatial, temporal, modal), (2) *directions* along those dimensions, and (3) *distance* in each given direction. Since dimensions define the associated directions and the nature of distance along them, each dimension and associated factors is addressed separately. Scope is treated as extending from the instantiator and as continuous in its coverage across the span between the instantiator and the furthest applicable points relative to it. Excluding

[1] Do note that even the Russellian approach leaves room for variation in scope. For instance, it is possible to be a presentist about definite descriptions and therefore ignore the temporal axis.

sections within the resulting generic domains must be systematic and independently motivated but the option is left available. Depending on the form of scope in question, the resulting generic domains provide the template for those within which the meanings of individual instantiators are, can be, or should be specified according to the principles a theory applies. Scope itself consists of vectors along the spatial, temporal, and modal axes, and said vectors possess both a direction and a distance based on the details of the dimension in question. A given axis may even house several vectors in different directions such as both the future and the past along the temporal dimension. The factors underlying each vector define the associated range of available values. For instance, a positioned observer tasked with processing meaning may only access facts and counterfactuals based on the observer's degree of access and cognitive processing capacity.

6.1.1 Spatial Scope

Spatial distance might appear inconsequential to defining meaning, especially if one has Russellian inclinations. For the purposes of specifying domains, the three spatial dimensions are reduced to one which only possesses one relevant direction: away from the instantiator. The exact axis along which such relative distance is measured matters not because they would only be defined when framing a specified space, and the directions of height, width, and depth depend on the applied frame.[2] Since this framework ought to be simple enough and the main issue with understanding spatial scope concerns its *contribution* to meaning, the discussion below focuses on overcoming resistance to treating relative distance as a factor in defining meaning. After a brief illustration of its effects, concerns about anchoring spatial scope on instantiators which may be discontinuous or displaced are addressed.

Definite descriptions which reference no proper names provide an illustration of how the spatial dimension is relevant even to theories of absolute meaning.

[2] The default assumption for most purposes involves a surface of an object with a centre of gravity around which proximal entities orient themselves – such as the surface of Earth. However, imposing any absolute spatial coordinate axes is arbitrary in terms of its orientation.

Russell's (1905) classic example of 'the present king of France' references 'France' and therefore denotes a *particular* geopolitical configuration. Because such links limit spatial scale by anchoring possible referents, focusing primarily on them hides the effects of spatial scope. In contrast, examples such as 'the inventor of the zip' (Evans, 1982, p. 50) at most *implicitly* reference particulars other than their unique referent. In Evans's example, the possible implicit reference concerns 'the zip': it *may* refer to the instances linked causally to the terrestrial event whereby the general form became associated with set function(s). Assuming that no such particular reference is made and 'the zip' is instead used to denote the associated pair of form and function which its inventor brought together, the spatial reach of the domain for potential referents for 'the inventor of the zip' determines whether the referent is *knowable*. After all, the limits of human knowledge also include a spatial component through (lack of) access. Just the pair of form and function is generic enough to likely have been discovered multiple times somewhere in the universe, assuming that the estimates of the number of (near-)type I ('planetary') civilisations on the Kardashev scale are realistic.[3] Given this estimate, since 'the inventor of the zip' is supposed to have a unique referent, there can be no certainty of the referent's identity independently of recourse to speaker intentions and similar extraneous factors.

Thus, were an *unbounded* spatial scale being applied to Evans's example and if the reference to 'the zip' denoted the morphic and functional type rather than the members of a causally linked set, the referent for the definite description 'the inventor of the zip' would be epistemically *inaccessible*. More specifically, while a belief about the identity of said inventor might be *true*, available reasons for concluding as much would be unable to exhaust open alternatives. If the outlined conditions stand, no *conclusive* judgement concerning the identity of what such non-demonstrative, non-

[3] The Fermi Paradox (e.g. Hart, 1975) concerns the probability of interstellar (type III) civilisations relative to lack of evidence for them, and even a conservative estimate assures that in absence of unknown, hyper-restrictive filters (e.g. Hanson, 1998) they should statistically exist. Approximations for the ratio between pre-type III civilisations and type III civilisations assume orders of magnitude between them. Therefore, if the zip is a good move in Design Space (Dennett, 1995, pp. 77–78, 306) for needs basic enough to be shared by alien life, it has *likely* emerged independently elsewhere in the universe.

naming definite descriptions denote is concurrently possible.[4] This principle is generalisable: whenever the conditions a definite description specifies *may* be fulfilled outside the known universe to which humanity has access, if *possible* referents are being defined relative to an unbounded space, the identity of the actual referent cannot be confirmed. Meanwhile, limiting possible referents to concurrently accessible entities incurs a spatial scope tied to that total degree of access – and motivating said principle would likely involve some form of intentionality towards the referent. While it is possible to bite this bullet as part of insisting on unbounded spatial scope, the demonstration ought to show how presuppositions about the results introduce spatial limitations on the domain relative to which referents are defined.[5]

That the scopes which theories apply possess such a spatial aspect does not yet demonstrate why the relevant domains ought to be anchored on the instantiator itself – as the proposed model suggests doing. Spatiality-involving considerations in particular invite two problem scenarios: (1) discontinuous instantiators, and (2) displaced instantiators. The former includes arbitrary states of affairs without material continuity – a possibility for which the proposed notion of instantiator allows – and the worry concerns turning the corresponding domains into blotchworks wherein influences based on satellites may influence manifest, central instantiators' meaning.

[4] Some inferences involving identity conditions would still be possible, of course. Besides truisms, both deductions about independently sufficient and disjunctively necessary sets of conditions for fulfilling the description and various forms of probabilistic reasoning would be possible.

[5] The horns of the dilemma are therefore that either claims about proper referents of definite descriptions (not anchored using proper names or other designated unique instances) are *all* underdetermined, or *some* means of specifying spatial scope for associated domains is necessary. Insofar as Russellians present themselves as providing knowable definite referents in such instances, they must thus be opting to apply domains limited in some manner, whether consciously or not. The literature on quantifier domain restrictions (e.g. Gauker, 1997; Stanley & Gendler Szabó, 2000) can be considered an attempt to provide such proper guidelines for specifying domains with ideal scopes for purposes of coordinating linguistic intuitions with formal notions of quantification, for instance. Though, such restrictions already relate to a more contextualist approach than a world-oriented Russellian might allow. It should also be clarified that the existence of prior literature on questions concerning proper scope does not invalidate the approach being proposed: the primary interest of this approach lies in uncovering the scopes individual theories in fact implement in the texts expressing them and the extents of the scopes the principles of such theories support. These are values to be compared with the forms of overarching ideals the aforementioned debates instil.

The issue with the latter type of scenario involves the possibility of instantiators with meanings dependent on specific conditions being isolated from them and thereby having their meaning change depending on location. Twin Earth (Putnam, 1975) thought experiments where a person from Earth is spirited away to Twin Earth which only differs from their home by having all H_2O be substituted by functionally nigh-indistinguishable chemical XYZ help illustrate the considerations involved in either. Given the set-based nominalist treatment of type identity for linguistic units being applied, any instance of them produced in Twin Earth risks re-defining the meaning of the rest.[6] Meanwhile, uniquely individuated instantiators such as utterances are fully subject to the effects of these abnormal conditions unless scope can somehow be anchored or extended to include the expected conditions within the range of which their meaning would usually be defined. After all, centring scope on the instantiator itself does not *ensure* that tokens are subject to the central, meaning-defining conditions a theory posits. As a result, displacing such instantiators risks them being defined wholly independently of any associated baseline meaning whenever restricted spatial scope is centred on them. For instance, in the Twin Earth scenario, such repugnant cases might include earthlings' utterances of 'water' denoting *only* 'XYZ'.

[6] Under *most* circumstances, the possibility of detached instances is benign at least to any theory of type meaning which relies on the presence of specific psychological or societal arrangements such as whatever is required to ground appropriate conventions. Such circumstances being specific enough to only be realisable locally or even uniquely means that any far-flung extensions in the domain for defining meaning will not risk further influences needing to be registered. As such, any such extensions involving discontinuity would be inconsequential. As linguistic types tend to mainly matter to forms of semantic invariantism which in turn require either innate meaning which is dependent on the features of the instantiator itself or such complex psycho-social arrangements, this consideration ought to cover the central cases. Lewisian conventions (Lewis, 1969), for example, require the presence of knowers with access to the states of affairs the formation of common knowledge necessitates. This includes others as each must know what at least some others know, derived from epistemic contact with them. After all, in Lewis's (1969, p. 56) definition of common knowledge, the relevant part concerns how a state of affairs (*A*) indicates to every member of a population (*P*) that the rest have reason to believe it holds: '*A* indicates to everyone in *P* that everyone in *P* has reason to believe *A* holds.' One condition for this condition is everyone in *P* being aware of the existence of the rest and their access to *A*. They need not be acquainted but must minimally recognise that a discrete set of others with access to *A* exist. A capacity-based reading of 'indicates' is insufficient since potential knowledge does not contribute to actual common knowledge.

The solution to such issues lies in differentiating between one's mental representation of the scenario and the scenario actually occurring. The main difference lies in one's *own* presence as the observer in the former case. The objects to which meaning is being attributed are the *cognitively* realised representations of the relevent entities. The conditions under which the significance of such representations is ascribed are inclusive of the conditions with which one is familiar, and given their relative status as facts as opposed to the speculative fictiveness of Twin Earth, these *status quo* considerations may easily take precedence. Supposing that the potential issues being raised are legitimate, the problem they share would be resulting instantiators' meaning being *mismatched* with the familiar default. Either the whole type is affected by an errant token or a token's meaning bears no resemblance to similar predecessors. Such manifest default meanings are derived from established facts and they are being projected onto the instantiators *prescriptively* – independently of the total set of conditions. Herein lies the issue with such worries. Were the exact conditions realised, they would *change* the set of facts on which such judgements depend. The criteria based on which theories define categories are constructed based on available specimens, and being presented with Twin Earth parallels constitutes a genuine *choice* for whether they are allowed to qualify or not. Depending on one's priorities, the resulting classification may be gerrymandered whichever way. The people of Twin Earth, for instance, would not count as human by phylogenetic standards that track evolutionary lines but in being informed of their existence, one might instead prefer a behavioural or structural definition to accommodate them.

Hence, the mismatch ought to be expected before definitions get adjusted to avoid repugnant conclusions. For instance, Searle (1983, pp. 93–97) argues that when the earthling on Twin Earth calls XYZ 'water', they *establish* a convention whereby 'water' forms a super-class inclusive of two chemically distinct but functionally similar substances, similarly to 'jade'.[7] Previously, this would have been a

[7] 'We could *define* "water" as H2O, which is what we have, in fact, done; or we could just say that there are two kinds of water, and that water on Twin Earth is constructed differently from water on Earth.' (Searle, 1983, p. 93, emphasis in original)

possibility which heeded no consideration since only H_2O possessed the qualities definitive of water. Given their unique circumstances relative to their contemporaries, the initial earthlings in Twin Earth are arguably in a position to dub XYZ in Earth English. Being the only earthlings acquainted with XYZ makes them the *de facto* community-specific experts on the substance for purposes of a deferential account like Putnam's externalism. For such an account, other users being unaware of the inclusion of XYZ under 'water' would not matter since deferential usage already makes personal acquaintance with proper meaning irrelevant. Any such designative definitions can then be consolidated or re-negotiated as usual. As this example shows, the potential effects of discontinuous or displaced instantiators are ultimately benign because the resulting need to reflect on prior categorisation principles is no different from what any other such discovery prompts. The acceptable range of results should not be prescribed based on what the results would have been prior to such shifts in circumstances.[8]

While the spatial dimension remains perhaps the least relevant aspect of scope for purposes of analysing ideal conditions because few theories seem willing to exclude any prevailing considerations based solely on relative distance, its value lies primarily in analysing implemented scope. The discussion on definite descriptions ought to demonstrate how an alleged commitment to all-inclusivity does not preclude the form in which a theory is expressed from having such limitations. This contrast between professed ideals and how their extent is being understood may reveal inconsistencies which compel choosing which scope takes precedence. Russellians, for instance, may limit the relevant domains to the known universe if determining unique referents takes precedence or accept most referents being impossible to designate conclusively if world-relative truth-conditionality is retained. While the centring of scope on the instantiator rather than it being defined independently is merely a

[8] However, if a theory is sensitive to the psychological states of the uttering individual, the displaced individual continues to embody the original conditions which moulded their personal psychology. Thus, unless the product is magically shunted away from them at whichever exact moment its identity conditions as an instantiator are fulfilled, their presence will provide *some* default influences.

methodological assumption, it is benign relative to spatial considerations and helps highlight how the instantiator is in focus whenever influences are aggregated.

6.1.2 Temporal Scope

In contrast to the unidirectionality of spatial scope, temporal scope extends bidirectionally from the extended present set by the instantiator, both towards the past and the future. Past states of affairs influencing meaning ought to be understandable. While etymology, for instance, is not *definitive* of concurrent meaning and may even be set aside whenever there is a clear historical break in proper usage, it can also transmit past influences. Future states of affairs influencing concurrent meaning is more exotic but also conceivable, as seen below. Despite these facts, the relevance of defining temporal scope may be questioned by arguing either that only the present representations of the past rather than past occurrences themselves may influence meaning or that each theory is encompassing but relation types have characteristic reaches. The former can be answered with counterexamples such as meanings dependent on trajectorial influences. Given the influence of *change* in their manifest meaning, reappropriated slurs (e.g. 'queer') seem to qualify. The latter criticism, meanwhile, must be answered with a counterexample of a meaning-contributing relation which affords greater temporal range than the ideal scope for applying it. Theories which reserve a role for *situational* contextual effects (e.g. Lewis, 1979a; Heim, 1982; Clark, 1996) qualify since situation duration is arbitrary.

Influences with temporal aspects are present in many approaches to meaning. Consider how the theory of conceptual metaphors (Lakoff & Johnson, 1980; Lakoff, 1987), for instance, uses etymological evidence to track implicit metaphorical usage which is traceable to factors involving embodiment. While the embodied basis remains in the present, its *effect* is historically motivated because there exists no *necessary* link between the involved concepts. How the target has been conceptualised determines whether merely compatible representations are being connected in virtue of the later conception having been modelled after the etymologically evidenced mapping. The etymology of 'to foresee', for example, is obvious and refers to for-

ward-facing vision in the context of predicting the future, implying that the future can be envisioned clearly and lies ahead. This can be contrasted with the Finnish equivalent '*aavistaa*' which shares its root with '*aave*' ('ghost'), referring to matters one recognises instinctively without seeing them (Häkkinen, 2013). While both languages include synonymous notions, each example arguably retains at least an etymologically tractable connotation concerning the availability of the future. Another obvious instance of past influencing present meaning is Kripke (1981) style causal externalism according to which referents are determined by demonstrative or descriptive baptisms. Effectively, people's proper names, for instance, would derive their referents from the existence of unique past events where the individuals were thus named. While the ideal distance extending to the past is likely infinite for a Kripkean, etymology-based analyses almost certainly want to limit it to avoid needing to accommodate dead languages separated from the target by several etymological steps. As with spatial scope, the implementation of either embodies a finite scope because of the limited resources (processing effort, writing space, etc.) available.

Comparably speaking, future states of affairs influencing contemporaneous meaning is posited considerably less often. The archetypical case is Jackman's (1999; 2005) *temporal externalism*. According to Jackman (1999, p. 158), 'what we mean by our terms can be affected by "accidental" developments in their subsequent usage.' Namely, specific forms of adjustment may retrospectively determine meaning. Positing either determinism or four-dimensionalism results in a sense in which the proper meaning at the time was always connected to yet unrealised states of affairs even if people could not identify it due to limited future-oriented access. Since externalism reduces individual intent to deferential gesturing, a person not realising what their expression meant would be deemed unproblematic. A classic case is 'Evening star' and 'Morning star' having both been used for Venus when people assumed the names denoted different celestial bodies. A temporal externalist would call any past usage of either name synonymous with 'Venus' despite people's conceptions and the assumed non-synonymity between the two at the time rather than a reference to Venus in specific relative positions or relative to alternative frameworks.

Despite these examples showing how theories may differ in the temporal extensions of their characteristic domains for specifying meaning and that influences may be defined four-dimensionally, reason for scepticism persists. Firstly, it may appear as though any past-based influence is actually based on the concurrent states of affairs which embody the original conditions. The resulting semantic presentism is tempting because such immediate conditions are generally both explanatorily sufficient and not dependent on the associated event having actually occurred. After all, as has been established in chapter 3, any given state of affairs is multiply realisable and therefore only conveys the *possibility* of each compatible preceding condition. The proposed counter to this temptation involves influences which must have a temporal extension and which are necessary for some manifest meanings. Even if a presentist reading remains *possible* given the manner in which concurrent states of affairs embody the stages of the temporally extended influence, it must acknowledge that the associated history is *explanatorily* prior. The contemporary states of affairs only contribute insofar as they may be treated as a representation of that history rather than on their own merit. Even if the process may be described independently of this connection, that description only acquires explanatory power in relation to it.

A fine example of a linguistic phenomenon dependent on historically extended sets of circumstances independently of the theory being applied are so-called reappropriated slurs. They are historically derogative terms which have acquired at least some positive senses applicable in certain contexts such as when they are used non-deferentially by in-group members (e.g. 'queer', 'nerd').[9] The status of such expressions as *reappropriated* slurs involves acknowledging the sense in which they are derogative and the construction of a positive, identity-expressing sense in contrast

[9] For empirical research on the power of reappropriation, there exists a study by Galinsky *et al* (2013) which shows that both outsiders and insiders judge the person using a derogative applied to their disempowered reference group as more powerful – possibly because they are actively refuting the negative definition or evaluation derogative use conveys. Croom (2013) also notes how important the possibility of reappropriation is for the semantics of slurs because they cannot be treated as inherently and definitively expressive of disdain as a result.

to that retained association as an act of defiance. The power of the latter sense derives in part from the fact that the same term has been used derogatively by an authoritative out-group. A feminist who proclaims 'I am a bitch so beware', for instance, self-applies a label used to criticise women who do not conform to the norms which define behaviour considered appropriate by patriarchal standards (deference, mildness, etc.). Since the latter is defined in relation to the former, both the preceding practice and its antithetical complement together must constitute the state of affairs necessary for an expression to act as a reappropriated slur as part of its total meaning. This temporal extension makes the relevant considerations impossible to express *directly* by a temporally simple state of affairs unlike when an influence consists of the *presence* of an entity with some temporal extension. The contemporaneous state of affairs which conveys the effects of this historical trajectory instead derives its explanatory power from how it expresses that history *indirectly* by acting as a representation for it. This difference makes the explanatory power of the present state of affairs *dependent* on the occurrence of the associated history (or an illusion thereof). Even if the effects contemporaneous states of affairs have can be *described* independently of that history, an explanation would require a degree of generalisability the momentary cannot afford because the possible implementations of such effects are too multifarious. One cannot generalise why these specific states of affairs have their effect without invoking the shared connection of what each represents.

Since the purpose of analysing scope lies in potential differences between theories, the other potential issue concerning temporal scope in particular is whether any such conditions exist outside implemented scope. If all cross-temporal relations have their own limitations in terms of available reach and each should *always* be accounted for, no separate scope need be defined. For instance, the causal theory of names (e.g. Kripke, 1981) should in principle never yield misleading results regardless of how long the chains between baptisms and name-incorporating utterances become because each name has a unique candidate for its baptism. While some theories may accommodate unlimited temporal scope in this manner, if this feature can be proven not to be universal, defining intermediate scopes has value. Besides how

theories dependent on limited scopes such as a restricted rather than world-bound theory of definite descriptions are conceivable, a variety of scorekeeping theories (e.g. Lewis, 1979a) dependent on situational common ground rely on such restrictions. Such theories mainly concern indexing expressions such as the use of definite articles and Lewis's term 'scorekeeping' is used for them here since each treats a communication situation as a mostly fresh board wherein each common ground establishing move must occur. However, situations embed indefinitely so lines must be drawn.

Consider the prototypical communication situation: one or more individuals interact for a discrete period between an opener and a closing line. That period provides a context wherein each statement may be related to everything preceding it, including parts of itself. The sense in which said situations is embedded involves how most such conversations may be constructed as parts of wider discourses, either between the specific individuals or representatives of key demographics. Perhaps the easiest conceptualisation is a social media thread such as a private message exchange: any given active period is an extension of the recorded history of the total set of interactions. While this example makes the continuity explicit, it applies to all interactions. Since some active exchanges may involve weeks, months, or even years between contributions – consider pre-modern academic correspondence – the frequency of such contributions does not differentiate between suitable independent communication situations and wider discourse. However, within such extended situations, it is clearly possible that principles like Lewis's (1979a, pp. 240–243) principle of definite referent based on greatest salience[10] produce deviant results. For instance, since the greatest salience involves a superlative quality, for *any* set of candidates, at least one qualifies. Thus, unless there are further restrictions on the appropriate domains of discourse (which mainly extend along a temporal axis), any definite description has an acceptable referent relative to *some* shared conversational context. A random proclamation such as greeting someone by stating 'The pig is the fattest in

[10] 'The proper treatment of descriptions must be more like this: "the *F*" denotes *x* if and only if *x* is the most salient *F* in the domain of discourse, according to some contextually determined salience ranking.' (Lewis, 1979a, p. 241)

the litter' would therefore technically possess viable referents because Lewis sets no minimal threshold for acceptable salience.[11]

How discourse extends along a temporal axis means that any further restriction on viable communication situations engenders a principle which defines temporal scope. Such principles could be treated as merely further conditions on viable influences on par with other definitive relations, of course – formally, they are no different. The real difference lies in their contribution and the associated motivation: baseline definitive relations contribute positively by engendering novel influences whereas such scope-restricting principles selectively limit this range. The former are used to define the *nature* of sources for meaning while the latter specify their *extent* within that group. Thus, while it is possible to treat the two on par, doing so would obstruct this difference in their contributions and therefore the need for theories to specify the extent of appropriate scopes for their purposes. Such scope is not invariable across cases but different principles ground characteristic ranges for distinct types of scenarios which are subject to comparison. For instance, communication situations for scorekeeping purposes *could* be specified in terms of constituents' availability to active memory or the concurrent salience of an exchange. Either solution privileges immediate situations but allows its own range of further influences.

6.1.3 Modal Scope

Spatiotemporal influences are relatively simple compared to the final dimension for defining scope, modality. Some theories of meaning (or meaning-adjacent phenomena) accept that counterfactual considerations possess relevance. For instance, Kripkean *rigid designators* (Kripke, 1981, pp. 47–49) are terms which denote the cross-modal counterparts of the same entity across possible worlds.[12,13] Kripke specifically

[11] In fact, he explicitly brushes the question aside: 'I shall pass over some complications. Never mind what happens if two *F*'s are tied for maximal salience, or if no *F* is at all salient.' (Lewis, 1979a, p. 241). This move may be excused if the relevant domains are limited somehow since then it becomes possible for there to be no viable candidates for non-empty descriptions.

[12] 'Let's call something a *rigid designator* if in every possible world it designates the same object' (Kripke, 1981, p. 48, emphasis in original).

[13] Stalnaker (1978; 2012) provides another example of explicitly modal semantics.

calls (proper) names such as 'Nixon' rigid designators which grants the notion the semantic role of helping identify cross-modal referents. However, the inverse effect of said referential function is that whatever entities within the relevant cross-modal domain fit Kripke's identity criteria contribute to how the associated term should be understood once they are recognised. Hypothetically, for instance, if some Nixon counterpart was crustacean under Lewis's (1973, p. 20) closest parallel criterion for modal counterparts and the two theories were co-applied, the meaning of the proper name 'Nixon' would come to embody the possibility of denoting a crustacean. To avoid such absurd scenarios one will generally impose some restrictions either explicitly or implicitly and therefore implement scope-defining criteria. Yet, for there to be scope, direction and distance must be specifiable. This discussion of modal scope primarily explores how these two aspects of modal scope can be modelled for purposes of the proposed analyses. The answer lies in degrees of similarity (Stalnaker, 1968; Lewis, 1973) relativised to Dennett's (1995; 2013, pp. 220–226) by now familiar notion of the Design Space. In effect, by plotting possible worlds into Design Space, all the dimensions along which they vary may be conceived as axes for summative vector analysis. By combining the totality of vectors along such paths, the results can be represented by singular vectors between the designated starting point (i.e. actuality) and the result.

In describing the dimensions of Design Space (or rather, its direct inspiration, Borges's (1941) Library of Babel), Dennett (1995, p. 111) states that the hyperspace for representing the required relations involves an arbitrary number of axes set in right angles. The corresponding construct, he claims, is conceivable but not visualisable. In effect, each possible dimension of variation afforded by the medium to which Design Space is relativised must be represented. For his purposes, Dennett (2013, p. 225) contends with configurations of atoms as the unit of Design. Given the materialist underpinning of the current project, any level of physical base constituent with observable effects associated with variation within it suffices. With this in mind, if the ordering of possible world is then related to their degree of similarity, as Stal-

naker (1968) and Lewis (1973) propose doing,[14] such variation can be tracked along each such axis with the values for actuality acting as the origo. In principle, the granularity of Design Space accommodates details at the level of local atom density or electron positions but this scale can be adjusted to match the level of detail relevant to meaning theory by aggregating such factors and focusing on comparisons between functionally equivalent locales. Such locales are likely best defined relative to humanly salient details such as phenotypic differences or scale. One can imagine an organism which is largely structurally identical to Richard Nixon at the time he was elected and which was elected POTUS in the counterpart to 1968 US presidential elections but which has congenital lobster-like feelers in place of the nose. This organism fits most criteria for being a counterpart of Nixon yet whether it constitutes one is an open question because people being lobster-faced would be expected to redirect a world's available trajectories, making the world of this 'Nixon' *unviable*[15] and therefore only *formally* possible. Cutting a theory's modal scope off at Gibbs's (1970) real possibility would be one available, relatively lax principle of bounding which possibilities invite consideration for purposes of defining meaning once recognised.

Modal direction and distance, then, may be expressed in terms of the multitude of axes along which possible worlds vary relative to actuality. For purposes of analysing scope, each such world should be treated as a total state of affairs within the bounds of the spatiotemporal scope extending from the instantiator and inclusive of the entities the theory requires to be represented. The associated modal scope

[14] Lewis's (1973, p. 10, emphasis in original) *Ordering Assumption*, for instance, states that 'for each world *i*, comparative similarity to *i* yields a *weak ordering* of the worlds accessible from *i*.' This ordering is *weak* in part since Lewis realises a strict ordering based on similarity is effectively impossible due to the variety of incommensurable axes: 'To avoid the questionable assumption that similarity of worlds admits somehow of numerical measurement, it seems best to identify each "degree of similarity to *i*" with a set of worlds regarded as the set of all worlds within that degree of similarity to *i*.' (Ibid. p. 12).

[15] A key feature of Design Space is how the vast majority of possible designs are non-functional, as Dennett (1995, p. 113) states in relation to genetics: '[N]ot every such sequence in the Library of Mendel corresponds to a viable organism. Most DNA sequences – the Vast majority – are surely gibberish, recipes for nothing living at all. That is what Dawkins means, of course, when he says there are many more ways of being dead (or not alive) than ways of being alive.' The Library of Mendel corresponds to the set of possible organisations of DNA within Design Space.

involves accounting for both the individual vectors involved in any examples used as evidence and their sum. To simplify matters, unless a central element such as the constituents of the instantiator are being modified, any change can be generalised along *aligned* axes – i.e. the same kinds of variation such as rescaling are not sensitive to identities of involved particulars. While there is a difference between worlds based on which entities are subject to similar changes, when any entailments are bracketed, the same *degree* of difference is involved, and scope is only defined relative to the extent of such differentiation. These movements along aligned axes show the minimum distances supported in said directions which is why each is registered individually. The associated vectors must ultimately be summed to define the peak total difference but ideally, each involved combination's results should be mapped. These combinations plot out each enabled trajectory if one assumes that modal scope is inclusive of each sub-set of changes which a scenario includes.[16]

Summing the associated vectors along the various axes defines points in the modal hyperspace which can themselves be connected to the origo to define new vectors with set lengths and directions. The longest vectors involving an approximate direction help define the associated *minimal* modal scope. Thus, plotting out the possible trajectories using the set of differences mentioned in a given exemplar scenario (as well as any associated immediate adjustments) defines a field of compatible possibilities which extends from the actual (or a theory's representation thereof). Despite the use of mathematical notions such as 'vector', though, the involved values should be considered suggestive and relative rather than absolute. As Lewis (1973, p. 12) points out, attempting to straightforwardly quantify degrees of similarity is dubious. While each axis of differentiation might be measured on some numerical scale, their overall incommensurability prevents any univocal overall scale. Instead, similarly to filling in evolutionary history between available fossils, the path between

[16] This is by no means a trivial assumption since different changes might in principle only be allowed in *specific* combinations. However, should some theories require accounting for such synergistic effects, it can be done on an individual basis where the specific details override the general methodological principle.

actual variants and meaning-affecting functional alternatives can perhaps be extrapolated by considering which intermediates *may* impact meaning. For example, stars within the same luminosity group are categorised based on their size (supergiant, subgiant, dwarf, etc.), and the size-based trajectory between a star and its modal counterpart could be specified in terms of these categories.

6.2 Forms of Scope

While the above section largely refers to scope only in relation to the involved dimensions, a further classification in terms of role distinguishes between the forms which scope takes for a given theory. The first one is *implemented scope* which is defined relative to the actual corpus based on which the theory gets reconceived. Implemented scope involves the limits of non-extrapolated mental spaces founded on material the text explicitly provides. Implemented scope is therefore linked to the theory-internal observer positions which act as the perspectives relative to which the totality of such material is presented. Because of this material basis, implemented scope is *always* bounded and should thus be specified to determine available venues of expansion and relative extent between theories. On the other hand, *ideal scope* is defined relative to the tasks a theory adopts, and it provides a success condition: if a theory's predictions match the results for such domains and these results have some application, the theory is adequate for its purpose. Finally, *potential scope* expresses the true extent of the domains the theory may support. Potential scope is derived from exemplars which demonstrate standards for expected meaning together with the affordances of the applied set of principles. Together, the three define how well the theory realises its alleged purpose relative to available domains.

6.2.1 Implemented Scope

Implemented scope only applies to the actual corpus expressing a theory. It is defined relative to the coordinates provided by presented elements. Besides the constituents of any provided examples, such elements include any non-specific entities to which relative coordinates are attributed. The latter option includes any mention of poten-

tial influences referred to only in terms of their position relative to other elements, mainly the instantiator, such as 'immediately preceding states of affairs'. Because it is tied to actually invoked elements, implemented scope is necessarily finite. This fact is particularly pertinent when analysing theories of absolute meaning which allege to apply across all-encompassing domains since the mental models for even such theories are bounded by the limited selection of considerations finite texts and human minds may accommodate.[17] Relative to such theories, analysing implemented scope may reveal the author's blind spots: any dimensions and directions they fail to consider in practice ought to be tested before stretching the distance along already included directions. While implemented scope is necessarily non-comprehensive of an author's full personal perspective, its *dependence* on that perspective makes any exclusion indicative of either attentional or imaginative boundaries. For instance, as Clark (1997, p. 190) emphasises, the prior cultural artefacts one's environment affords define much of an individual's learning potential. Thus, an author without access to the notion of space-time as a four-dimensional object, for example, would either need to discover *some* comparable conceptualisation themselves – likely at great personal effort – or their theory could hardly accommodate the future as a potential influence in the vein of temporal externalism (Jackman, 1999; 2005).

Such actualisation defines implemented scope in contrast to ideal scope being hypothetical and potential scope implicit. While the individual values associated with specific instances a theory lists matter as evidence of the range being incorporated, the emphasis lies on the highest values for each functionally distinct direction given the included dimensions. They act as signposts for the extent of the considerations included in the text – whether the author had a wider perspective available or not. Unless some scope-defining principle can be specified for the range of cases

[17] Consider how Nagel (1986, pp. 5–6) describes achieving objectivity as a succession of steps from the subjective, thereby emanating from one's own prior understanding and generalising on that basis based on further data. While this thesis disagrees with Nagel on the possibility of people ever *realising* a view truly from *nowhere*, even he appears to consider the subjective the starting point which is shed *gradually* when one reaches out towards the ideal of detached impartiality. Since one is attempting to capture an infinite reach using finite resources, any resulting extension can then be retraced to its source and analysed in terms of what it affords and why.

a theory incorporates (e.g. further criteria within the category of otherwise viable influences or meta-explanations matching the evidence), these signposts effectively define the overall scope being implemented. Even when a corresponding explanation such as availability to the model processors presents itself as a means to adjust implemented scope for further cases, this limit reveals the extent of *incorporated* considerations – the material for constructing corresponding mental models.

Outside its methodological significance relative to determining values for the other forms of scope, implemented scope by itself acts as a threshold for falsification. Specifically, in a scenario where applying said scope results in some problematic deviation from predicted meaning, the alternatives for resolving such cases without modifying a theory's core principles are either curtailing or extending applied scope. Unless a scope-defining higher order principle which fits the established pattern is available, attempts at curtailing implemented scope would curtail the cases from whence it was originally derived. Extending scope, on the other hand, only works as a solution if the theory already includes means for meanings to be defeasible rather than incremental – i.e. when extending the accounted for circumstances may modify previously established meanings instead of merely complementing them. Options include rules for defeaters that can negate other influences[18] or openness to overriding influences such as the presence of greater examples as referents of superlative expressions.[19] However, such defeasibility conditions make any scope extension endanger established cases accordingly. The effects of their inclusion among applicable influences within a domain may only be remedied by excluding them or through further defeaters but only the same sorts of general considerations based on which overall scope is adjusted avoid turning *ad hoc*. Additionally, any

[18] Dancy (2004, pp. 41–42) discusses a similar phenomenon for moral reasons, under the title of 'disablers' which prevent other reasons from taking effect, such as how incurred danger to one's own person may remove obligation for certain acts for supererogatory cases. Normally, one would (arguably) be morally obliged to save another life but diving into icy waters to save a drowning person who fell through the ice is near-suicidal, making the supererogatory act fully volitional.

[19] For instance, 'the tallest mountain' would usually be taken to denote Mount Everest but if the associated spatial domain extended to cover even the solar system, Mars's Olympus Mons is approximately two and a half times as tall, being nearly 22 kilometres high.

damage incurred by extending scope – such as the referents of definite descriptions changing being solved by limiting it anew – would reinvite the initial issue which was being resolved. Thus, in the absence of such outlets, extending scope can only compound the issue of deviant meanings and defeasibility risks irreversible issues. As such, if a problem case is identified within the range of implemented scope, theories without defeaters or other forms of overriding have no (moderate) outs and the rest are similarly compromised should the required scope-extension invite *any* issues.

6.2.2 Ideal Scope

Where implemented scope provides a baseline the theory must minimally support, ideal scope (where applicable) acts as the threshold for a theory's success at the tasks it sets for itself. The ideal scope for a theory may either be professed, often in relation to expressing the intended task, or implicitly entailed by the task a theory is addressing. Since issues of scope are mostly tacit, the best examples of professed scope involve theories of absolute meaning which effectively state as their purpose to specify the unique meanings associated with the relevant expressions.[20] Meanwhile, the task of explaining meaning in communication (e.g. Sperber & Wilson, 1995; 2012; Borg, 2004; 2012) implicitly sets its own limitations on appropriate scope. No *set* values are involved but one must respect the limitations of real communicators by having the corresponding positioned observers reflect them. Since the communicators must have access to all required influences, addressing meaning in communication entails more of an upper limit than a minimum threshold. This also shows why wider scope is not necessarily preferable, especially if a theory may only function given such extensive domains. No general principles by which features of a task determine the associated ideal scope are proposed here, given the complexity of

[20] Besides Russell (1905), early Wittgenstein (1921) provides a *relatively* explicit outline by claiming that truth is defined relative to the world as the collection of all facts in logical space (Ibid. §2.21, §1.13) and that reality includes the existence and non-existence of (atomic) facts (Ibid. §2.06). In terms of ideal scope, then, the picture theory of truth with respect to meaning would seem to encompass logical space as it also includes the non-factual states of affairs relative to which false statements remain *meaningful* rather than being nonsensical. Similarly, what each true statement would represent is a corresponding state of affairs *anywhere* within a world.

the matter and how each identified task should be analysed separately. However, features requiring certain aspects to be accounted for are discussed in section 6.3.3.

Ideal scope provides a success condition in the sense that a theory ought to remain consistent between predicted meaning and resulting meaning when its principles are applied to such task-based domains. Depending on the task, ideal scope involves a minimum required scope, a maximum available scope, or a range set by both. No theory's predicted meaning is *fully* internally motivated, either: descriptive theories are subject to observation-based facts and prescriptive theories to the other functions their semantic pictures serve, such as enabling some epistemological position.[21] Hence, resulting meaning may conflict with predicted meaning because the former is derivative of only the theory and the relevant facts while the latter entails some external obligation the theory must fulfil. Ideal scope corresponds to the range within which corresponding domains engender the results predicted by the standard the theory is applying such as dictionary definitions.

To provide an example, consider how the inclusion or exclusion of a past-directed temporal dimension determines whether Russellian definite descriptions yield the contemporaneously or historically wealthiest person as the referent of 'the wealthiest person'.[22] The question becomes which the theory *should* designate to fulfil its main function instead of merely acting as a selection method within pragmatically defined, variable domains. This logic by which definite referents are denoted extends to domains of *any* scope. Minimally, though, Russellian definite descriptions treat *worlds* as their domain, as opposed to Austinian *situations*, as characterised by Barwise and Etchemendy (1987). This professed ideal constitutes a floor for the range of scopes at which the theory must operate successfully. Consider if applying the the-

[21] In effect, if a function is pre-recognised, there are *some* standards to be met, and a theory would only befit an unrecognised function incidentally. This demand for applicability is also sufficient to weed out vacuously consistent theories with arbitrarily low threshold based on internally generated predictions. Such cases include the likes of a theory which predicts that no expression has a meaning or a rule which ensures as much, both of which could otherwise act as counterexamples.

[22] Based on current estimates, the referent would thus be either Jeff Bezos or Mansa Musa, the tenth ruler of the Mali Empire. If autocratic rulers are excluded, the historically wealthiest person would instead be John D. Rockefeller.

ory were to return results such as everyday mentions of 'the tallest mountain' having an indeterminate placeholder value[23] instead of denoting Mt. Everest when the truth of any associated claims (e.g. 'the tallest mountain lies between Nepal and Tibet') is being evaluated. The acceptable answers for such cases are pre-established, and such deviant results would only show that the theory must at least be unsuitable for that specific task. Effectively, how certain words are used belongs among the sorts of framework beliefs on which Wittgenstein (1969, §307) muses: judgements of truth and falsity are based around them since the associated degree of certainty exceeds that of any available justification for or against. We might accept that in an absolute sense, there exists a mountain higher than Mt. Everest, but prescribing that mountain as the proper designee for assessing the truth of each mention would be inappropriate when 'the tallest mountain' is indubitably being used to denote Mt. Everest. Thus, consistency between expectations and results at the specified (range of) ideal scope makes a theory *adequate*[24] for its purpose because it shows how the rules incorporate all the relevant considerations, including prior standards.

6.2.3 Potential Scope

Neither implemented scope nor ideal scope expresses the actual limits of a theory, though. Both serve various functions which help one either derive or assess the scope a theory *affords* – its full potential in this respect. Such potential scope is not subject to the same incidental selection effects as implemented scope. It differs from ideal scope in how theories may fail to meet the expectations set by ideals. While a theory is being formulated, pertinent considerations may go unappreciated for a variety of reasons such as general attentional limitations and various cognitive and cultural

[23] As statistically, the tallest mountain in the universe is unlikely to exist among those with already measured heights.

[24] The implication that theories can succeed by being good enough rather than uniquely true follows from the pragmatist aspects of the pluralist ontology at play (Goodman, 1978; Dupré, 1993). Technically, there would be degrees of success for each given task but succeeding *in* the task is itself a form of success to which multiple theories may lay claim. For instance, both Newtonian and Einsteinian physics succeed at predicting the behaviour of objects within a range of values suited for purposes such as architecture even if general relativity's wider applicability makes it preferable in these theories' primary field of application – physics.

biases.[25] Nothing *ensures* that the promises being made are being fulfilled. Potential scope is left as the extent of the instantiator-centred domains at which a theory remains consistent between predicted meaning and resulting meaning. In effect, when the principles a theory advocates are applied to identify sets of meaning-defining relations within particular domains, potential scope equals the range within which results match the standard set by the precedent the theory advocates. Assuming that at least some such relation types are open-ended and applicable to non-unique potential influences, applying the same principles to identify matching relations within any wider domains would invite at least *some* problem cases. If the greatest allowed range does not remain consistent, this range ought to be linked to an applicable extent-adjusting principle of the kind discussed above.

For instance, consider a theory which associates word type meaning with convention (e.g. Lewis, 1969). Within a materialist framework, any such convention would correspond to the presence of a functionally specified physical arrangement[26] whereby a part of the system of each applicable meaning-processor is primed to produce set activation patterns in response to the associated expression – or thereabouts. Such theories tend to limit themselves to contemporaneous conditions and therefore have minimal past-oriented temporal scope. The reason can be made evident by considering what exceeding the scope a theory supports may entail. This may be demonstrated relative to cross-temporal or cross-modal influences both. The cross-temporal case would make obsolete conventions part of active meaning

[25] Woolard and Schieffelin (1994), for instance, review discussions of so-called *language ideologies* – the socially or conventionally self-evident assumptions about the nature of language. For an example perhaps applicable to theorising about language, consider the following quote (Ibid. p. 63): 'Language mixing, codeswitching, and creoles are often evaluated as indicating less than full linguistic capabilities, revealing assumptions about the nature of language implicitly based in literate standards and a pervasive tenet that equates change with decay […] Written form, lexical elaboration, rules for word formation, and historical derivation are often seized on in diagnosing real language and ranking the candidates […]'. In modern times prior to the normalisation of the Internet, often monolingual authors in position to theorise on how people acquire their 'native languages' would have limited experience of active language mixing, for instance, making them less likely to treat language as ecologically determined idiolects which *resemble* said canonical systems.

[26] In other words, it would be multiply realisable – but the presence of any exact arrangement matching the functional criterion would suffice to engender the related meaning.

– for instance, 'success' would still mean *any* outcome rather than only favourable ones. While the potential results might seem absurd, such theories possess some merit: if the sort of meaning at play is not directly tied to *use*, in a society with modern information storage capacity, such legacy meanings remaining recorded provides grounds to argue that they are suppressed or tacit rather than obliviated. Thus, such circumstances arguably afford forms of meaning unique to them and therefore could validate corresponding theories relative to associated tasks but they would remain inapplicable for the theory's original purpose.

Identifying modally separated convention-based influences involve a comparison between the distinct ways an event responsible for proper usage could realistically have transpired. The (non-)planetary status of Pluto offers a familiar example. Whether Pluto is considered a true planet or a planetary-mass object – specifically, a dwarf planet – is a matter of the (functional) mass-based definition of a planet and Pluto's status has shifted over the years.[27] A convention-based pluralist semantics would conceivably accept that the meaning of 'planet' both is and is not inclusive of Pluto by folding such *potential* definitions into the meanings of terms. Even if the definition being applied were treated as more important, the rest could also prove significant for purposes such as contrasting legitimate neighbouring options with inapplicable frameworks. While both forms of alternative theories of convention-based meaning may have *their* applications, the meanings resulting from such scope expansion are clearly distinct from those usually intended and largely inapplicable for the same tasks. Thus, the same principle of identifying the presence of convention-matching states of affairs yields different results based on applied scope, and such differences may prove either helpful or problematic depending on the task the theory is intended to address.

[27] For instance, under Stern and Levison's (2002, p. 208) minimal criterion of having shape be determined primarily by own gravity rather than mechanical strength while also not supporting internal fusion reactions, Pluto would qualify as a planet. However, while Stern and Levison (Ibid. pp. 210–212) accept ability to clear planetesimals (orbital clutter) into their sub-classification of planets, Basri and Brown (2006) argue that such ability should be treated as a primary qualifier, making Pluto sub-planetary by their standards.

6.2.4 Purposes of Scope

It is important not to mix these three forms of scope or ignore some of them. A professed ideal and the reality of what a theory may support can differ, and what gets implemented has its own significance even when it does not cover the true potential of a theory. The above distinctions ought to make clear how each theory involves three meaningfully distinct forms of scope: Theories *implement* a specific scope which directs how they become conceived by focusing attention. Each theory is subject to external or self-imposed restrictions which define an *ideal* that must be met through consistent results under the circumstances domains of the associated extent entail. Finally, each theory has its real *potential* to accommodate domains of a specifiable extent before its principles risk entailing inapplicable results. While this sub-section mainly explores independent uses for information about each type of scope associated with a theory, they also relate to each other in ways which are explored in more detail in relation to the means of identifying each.

Allusions to the significance of identifying the various forms of scope associated with a given theory above have mainly focused on intra-theoretical evaluation. Implemented scope acts as a minimum which a theory must support systematically. Ideal scope sets the threshold for adequacy for a theory's intended purpose. Potential scope expresses the extent to which a theory may fulfil these two criteria. However, such differences also ground inter-theoretical comparisons. Specifically, when the implemented and potential scopes associated with a theory are either explicit or retroactively embraced, they act as an implicit *standard* for the purpose in question. Consider the roles these two internally determined forms of scope possess: one sets a minimum which the author treats as definitive through their examples while the other defines the limits of their theory. As such, implemented scope communicates an expectation which suggests norms for *inclusion* (but not exclusion) among the available scope-defining factors: dimensions, directions, and distances. Should the ideal scope associated with the relevant task be at all open-ended – e.g. setting a minimum threshold or a range rather than distinct values – the potential scope of a

theory provides an upper limit for what its proponents would promote as an appropriate ideal. If the ideal scope is less than well-defined, the potential scope of an applicable theory provides an approximation. When theories which share a purpose have mutually incompatible potential scopes (e.g. one includes a dimension the other cannot support), they provide opposed standpoints on what the ideal scope for the task includes. The reasoning provided to consolidate such standpoints ought to then advance the general understanding of which considerations are involved and why.

Examples ought to illuminate both contributions, even if the cases are necessarily hypothetical when there is limited existing data on such details for different theories. First, to illustrate how a theory's implemented scope can suggest norms for the inclusion of specific aspects of scope, consider the future-oriented core principle of Jackman's (1999; 2005) temporal externalism. In this case, the involved non-standard direction along the temporal axis is explicit when Jackman (1999, p. 161) makes statements like 'The diachronic division of labor is manifested in our confidence that, even if nobody knows exactly what falls under the extension of a given term, once somebody did, or someday somebody will.' In fact, this quote shows that temporal externalism goes both ways since Jackman also accepts that meaning can have been *settled* by past usage. Such cases might involve dead languages where even when the archaeologist uses the terms they had identified but with which they associate no meaning themselves, their utterances would carry those meanings. In the other direction, when an ancient astronomer mentions 'the Evening Star', the theory would attribute to that name the full meaning currently associated with Venus. The task Jackman sets for the theory is shared with other forms of deferential externalism: explaining the general referential meaning of terms (as opposed to subjectively manifest or connotative meaning, for instance). Even if Jackson were not explicit about his intentions, the directions being implemented[28] would constitute attempted norm-setting for this task since the inclusion of such considerations relative to a task *elevates* them to a position of relevance. The logic which underlies such implicit

[28] Jackman's (1999, pp. 158–160) own examples also implement future-oriented scope even if they would have taken more space to reproduce here.

norms relies on the conditional rule that if there exists a particular consideration which has scope-involving properties (such as relative temporal direction) and which influences meaning, then *some* meaning-influencing factors have said scope-involving properties. Additionally, any scope-involving properties associated with meaning-influencing entities ought to be integrated into the ideal scope for that task since the resulting domains must accommodate all relevant influences. In effect, then, since implemented scope corresponds to the minimal *positive* requirements of a theory, any theory presenting itself as a viable solution on an issue also presents the associated elements of scope as pertinent to that task.

As for the limits of a theory's potential scope acting as a guideline to the associated task's ideal scope, any examples ought to be based on tasks with currently ill-defined restrictions. Anything which necessitates modal scope being involved is a good candidate since modal direction and distance are so hard to codify. Most tasks involving modal solutions such as the grammar of progressives (e.g. Portner, 1998) or specifying propositional content of assertions (Stalnaker, 1978; 2012) only involve a *possible* modal dimension. These cases do not suffice for the purposes of the example. In contrast to the aforementioned tasks, a pursuit one might call speculative etymology – inventorising the *possible* developments rooted in specified terms – necessarily involves modality without pre-specifying an acceptable range. The approach being taken is based on cognitive linguistics since as Lakoff (1987, pp. 451–452) emphasises, using embodiment as a foundation for linguistic research also involves assuming that (folk) etymology is non-incidental and indicative of real historical connections. The possible degree of variation for an embodiment-based theory of speculative etymology has clear limits on the variation it would allow. The example can thus be based on the potential scope this framework should afford. Since the exact forms involved cannot be predicted, the related instantiators are specified in terms of their roots and their functions. Thus, a familiar term such as 'appraise' might be specified as [*apprize*][merit], for instance, since it derives from said root but applies the evaluative logic of pricing to various (dis)merits instead based on the afforded phonological association with 'praise'.

To illustrate how embodiment would define a modal domain, consider [sous-vide][economy]. Sous-vide is a prolonged, low temperature cooking method involving vacuum sealing, and it is becoming increasingly popular and accessible. Thus, its embodied associations as a user can be categorised into (1) investment, (2) convenience, and (3) innovation which include aspects such as the economic commitment to the circulator and vacuum sealing equipment, waiting, automation, skill divestment, and technological advancement. The position of the cooked also has recognisable embodied aspects such as (1) pressure, (2) sealing, (3) slow-cooking, (4) applied control, and (5) refinement. Assuming that economy involves – or is conceived as involving – similar positions of a shaper and the subordinate, that side of the equation also affords various mappings for purposes of cognitive metaphors (Lakoff & Johnson, 1980). Below is a non-exhaustive sample of three examples of available meanings for [sous-vide][economy] instantiators. They each represent possible understandings of notions derived from 'sous-vide' based on mapping the base concept's embodied aspects to how economics are conceived.

First, one might consider a strategy expressed using a verb which involves shapers making an initial investment in apparatuses which allow repeated, largely autonomously developing projects that have a long yield-time. Such a scheme might involve establishing a market-targeted and innovation-focused educational facility which provides its services in return for a share in participants' future projects. One marketing such an idea might (should the notion have been consolidated) propose that investors sous-vide[29] adult education, for instance. Second, someone in an externally induced economic crisis without any elbow room and under constant heat in the form of precarious circumstances might be characterised as being in a sous-vide trap of sorts. Arguably, people forced to take multiple jobs to subsist already experience a concurrently relevant condition for which the metaphor is apt. A counterfac-

[29] The actual term would likely morph as a part of the transition but the concurrent form is used for the examples for simplicity's sake. This direct application sounds off because of the primary association involving literal boiling rather than the involved triad of initial investment, long wait, and effortless returns. Current economists might also approach the 'sous-vide phenomenon' mainly in terms of the market enablers of the popularity spike such as reliance on Youtube personalities.

tual economist might call them the sous-vide class in this sense. However, as the third example shows, the same material can lead to contradictory results since it is contingent which aspects get emphasised and to which matching conditions they map. Should the combination of investment (time and money), convenience, and refined results be emphasised, 'the sous-vide class' might instead denote those who can afford the purchase and use of said equipment and similar conveniences: relatively well-off people with flexible schedules or home offices such as successful writers.

Since such examples are merely mapping out the space of possibilities, the probability associated with any given option is a secondary consideration. While each of the above examples has a negligible chance of ever being actualised – requiring use in a pioneering work and the normalisation of sous-vide to the point the reference is self-evident – they would all follow the principles of an embodiment-based approach. The requisite affinity which affords such constructs is there and could be realised in multiple ways. Relative to the main issue of a theory's potential scope acting as a standard for the ideal scope of the associated task, the example case would have a distinct thesis on modal scope for speculative etymology. In virtue of what it does, such a theory proposes that *all* theories of speculative etymology should (minimally) accommodate the modal pathways which embodiment traces. The corresponding principle would approximate an order to cover each pairing within the specified sub-domains linked by an experientially salient, shared aspect for which a corresponding notion with an imaginable use can be conceived.

While relatively lenient, such a principle would introduce restrictions over vacuous (mere) similarity (Searle, 1977, p. 96; Davidson, 1978, p. 254): either the present cultural context or an embodied experiential basic must highlight the relevant aspects of the involved entities (Lakoff & Johnson, 1980, p. 57). Thus, while effectively *any* pairing might be viable in the proper context, the facts relative to which such modal space is established matter, and the directions associated with the required routes would remain scope-defining. Since each theory implicitly asserts its own viability, in the absence of established prior criteria, these sorts of principles involving

the potential scope of a theory become tentative standards for task-specific ideal scope which may get consolidated later. Unlike how implemented scope only grounds principles for inclusion, however, potential scope can also act to exclude considerations which would endanger the theory since specifies the extent of the widest scope within which the theory may operate. By setting itself as a standard, a theory therefore also excludes anything beyond said scope since were the ideal to include them, the theory itself would prove unfit.

6.3 Extracting Scope

With the nature of scope having been clarified, the time has come to address the means by which the different forms of scope can be extracted using the framing device of attributed situations. Since the different kinds of scope each correspond to the domain of access which defines the dimensions of an attributed situation – the aggregated points of access available to the specified observer – defining them amounts to effectively assuming different perspectives on a theory. Implemented scope involves the perspective the text itself already embodies while potential scope requires pulling further back to see if the boundaries *may* extend beyond that, for instance. The methods suitable for each of the three types are discussed in order, starting with implemented scope which is the most basic and ending with ideal scope since it has the least general advice available. As stated, the relationship between implemented scope and definition 2 is the most direct, given how models based on definition 2 largely apply the same evidence which is already present in the text such as provided exemplars – the discussed paradigmatic cases. Thus, the coordinates and counterparthood relations recorded using the template definition 2 provides directly express implemented scope. Potential scope, on the other hand, mainly depends on what the defining relations of a theory afford and the precedent the exemplars set in terms of expected results. Approximating potential scope takes implemented scope as its starting point as accommodating at least the implemented domains is crucial and thus provides a guidepost. It would be possible to test different scopes at random to narrow the range of viable candidates but proceeding

from the established standard focuses such search. Finally, ideal scope's relation to consensus and potential task-specific principles are discussed in brief at the end.

6.3.1 Extracting Implemented Scope

This discussion mainly focuses on total implemented scope rather than variable implemented scope. The difference between the two has been alluded to above: total scope involves the highest available values whereas variable scope is regulated using some principle sensitive to variation between cases. Implemented scope consists of the ground covered by how the theory would be conceived together with universally available complements. Such values are available in models constructed using definition 2. Specifically, spatial and temporal scope may *initially* be grounded on the highest recorded relative values for the coordinates associated with the theory and the entities conceiving it involves. Implemented modal scope, on the other hand, relies on relations expressing sets of entities being counterparts to each other (or less symmetrically, the rest to those deemed 'actual'). As such, the associated scope depends on the recognised forms of difference between such counterparts: one would need to isolate the respects in which they differ and grade them across hypothetical scale of degrees of differentiation in those respects. While some – if not all – such variables could be scaled quantitatively (e.g. proportionate volume or relative complexity) given the right specifications, few if any theories discuss differences in such detail. Instead, an ordinal scale is posited. Example values might include 'indistinguishable', 'decipherable', 'discernible', and 'contentious'.[30] The sources for such values include exemplars and stated principles but they also do not exhaust what implemented scope encompasses. Unlisted but necessary influences for exemplars are also included.

The most important detail implemented scope reveals is which dimensions and directions are being recognised as part of the canon of a theory without need for extrapolation. The information it provides on scope distance matter less since

[30] In other words, 'identical but separate', 'requiring effort or expertise for the differences to become manifest', 'observably different', and 'contestably even counterparts'.

distance has more range to extend beyond the examples whereas other details express *types* of considerations which are included or excluded. Distance is more quantitative. On a similar note, exemplars are the primary form of evidence for identifying implemented scope. In this context, while any example being used within a theory qualifies, the significance of these cases comes from how they anchor the theory to familiar, recognisable situations and form connections with the corresponding parts of one's sense of the real. As Kuhn (2012, p. 187) notes, the provided applications for a theory ground how a person experience it since '[i]n the absence of such exemplars, the laws and theories he has previously learned would have little empirical content.' The empirical content to which Kuhn is referring is understood here in cognitive terms: as the ability to connect the theory with the objects of experience. This includes having some prototypical representations for the generic entities of the mental model for the theory such as 'natural kinds'.[31]

For each such exemplar – and they should all ideally be accommodated to reach a comprehensive analysis of a theory's implemented scope – one may identify both listed and unlisted but presupposed sets of influences. For instance, Sperber and Wilson (2012, pp. 39–43) discuss various variations of exchanges where a person ('Mary') responds to an initial question or other scenario with 'I'm tired' (e.g. being asked 'Do you want to go to the cinema?'). The meaning they discuss is attached to said utterance and experienced by the other interlocutor. Relevance theory being a contextualist approach, it must list some contextual influences: the form of the preceding question and then the milieu (e.g. an Italian museum). Surprisingly few such facts are listed. The rest are left presupposed even though some such unlisted influences are necessary to reach the proposed conclusions on the meaning of the utterance (e.g. 'Mary does not want to go to the cinema.'). For instance, the interlocutor ('Peter') associating tiredness with unwillingess to partake in activities involving travel

[31] How Putnam (1975) grounds his conception of scientifically specifiable natural kinds to water – a uniform chemical element – rather than more contested categories such as biological kinds likely presents the implied essentialism as relatively palatable for most since they would need to extrapolate to realise the implications. Even 'rock' encompasses countless types of minerals, some of which include organic elements (e.g. fossils) and includes contestable cases such as many jewels.

is being assumed. In an alternative scenario, if Mary stressed the 'am' in her response and Peter knew she was an insomniac who needed trashy romantic comedies to doze off, the same response could have expressed willingness (i.e. 'Mary wants to go see something that lets her sleep.'). If such variable experiences were plotted across the span over which they consolidated to Peter's present conceptions, the example would arguably possess a backward, past-oriented temporal aspect associated with its unlisted influences. While this scope could be *collapsed* into Peter's present state, given the concurrently available means of acquiring corresponding states, the first alternative – perhaps with an asterisked reservation included – would be more interesting. Unlike the presentist reduction which applies equally across most of the board, the use of a temporally extended scope grounds comparisons of the associated principles for restricting it. Given its cognitive bent, relevance theory would likely associate such past-based influences with individual factors like memory rather than any wider societal or even metaphysical considerations which externalist theories, for instance, might argue to provide a better foundation.

The actual means by which such analyses of exemplars work based on the suggested framework involve (1) identifying the pieces of text used in an exemplifying manner,[32] (2) listing explicitly invoked forms of influences, (3) checking what enthymematic or otherwise necessary assumptions must be being made, and (4) converting associated values to match the scope-appropriate ordinal scale. The first step is partly a matter of judgement but any passages acting to demonstrate how the theory relates to matters external to it and treated as fact (e.g. established theories on other subjects) ought to register because of this functional role they play. The second step is relatively uninteresting. You specify the forms of influence and the relative coordinates associated with each at a level of specificity the details support attributing to involved entities. The third step involves comparing the listed influences with the listed expected results and filling in the gaps similarly to how enthymemes are

[32] Not all exemplars need be detailed examples such as imaginary scenarios. For example, comments on the neurophysiological basis for implementing Fodorian modules forge links between theory and supposed reality.

identified in deductive arguments. If there are multiple possible sets of assumptions leading to the same result, one ought to record as many as they recognise but select one as their primary candidate. Considerations contributing to such candidacy include minimising scope – especially additional dimensions and directions – relative to precedent, parsimony in general, and the acceptability of the assumptions relative to the most charitably chosen cultural framework. Usually, this framework includes the best approximation of the facts at the time rather than the author's historical context when theories are being assessed for their contemporary applicability.

Finally, since the recorded influences are likely associated with values across a range of degrees of accuracy, the results must be normalised by mapping these values onto a common scale. For purposes of transferability, the range of individual results each nominator covers should be recorded but the recommendation presented here is that the values of the scale be linked to various means of *access*. In broad terms, one would minimally include a category for the immediately accessible such as the situationally perceptible, the genuinely but indirectly accessible such as remembered facts, and the in-principle accessible but situationally unavailable such as research on schizotypal personality disorder. A further category for the in-principle inaccessible complements this list and while it cannot be part of implemented scope (as every included element is accessible to at least the author), ideal scope for theories of absolute meaning might require it at times. These degrees of access belong to the relevant *situated* processors of meaning – whether individuals or even humanity collectively. Access being attributed this definitive role has its reasons which are clarified below. However, the motivation mainly depends on the relationship between access and manifestness, both to processors themselves and their authorial stand-in.

6.3.2 Extracting Potential Scope

Unlike implemented scope which is (potentially) subject to external factors, potential scope is motivated solely by internal considerations. Implemented scope is dependent on authorial access: which considerations the author managed to accommodate constitute the limits of the scope present in the text. This applies to the degrees of

access associated with both the situated observer(s) and the detached observer relative to which the theory is presented. Neither may *exceed* the author's own perspective at the level of implementation even if an author may attribute to them perspectives inclusive of factors they may *conceptualise* without truly conceiving them.[33] This relationship provides the foundation of the proposed explanation for any given theory's implemented scope having the extent it does. Beyond the incidental reasons associated with the exact details of included exemplars (i.e. why specific examples rather than some alternatives were used), a theory relies on the vision of its author for what it presents, and that *realised* vision cannot exceed their capacity which relies on available access for its scope. The transition to extracting potential scope highlights the externally imposed nature of such limitations.

In contrast, potential scope relies on the interplay between available sources of influence given the principles a theory posits and its standard for expected results. However, there remains a methodologically important sense in which potential scope is not independent of the limits of an author's imagination. Analysing such details relies on testing different values: there is no *apparent* means to directly deduce potential scope. As such, one needs principles to direct the search which reveals the limits of this combination of principles and expected results. If authorial access is treated as the foundation for implemented scope – which in turn acts as the baseline from which to expand – then considerations on how challenging conceiving a given aspect of scope is to a person are instructional for purposes of any attempted expansion. Harder to conceive alternatives have likely received less consideration and should be prioritised to establish whether the corresponding dimensions and directions are at all supported – especially if associated ideal scope involves them.

[33] 'Omnipotence' would be an example of a trait which can readily be conceptualised – people have no issue formally understanding the notion of being capable of anything – but which arguable can never be conceived successfully because no one may imagine the full extent of the involved scenarios. For a discussion of this difference, see Dennett's (1991, pp. 399–401) critique of Jackson's (1982; 1987) Mary the Colour Scientist thought experiment which requires readers to imagine a person who knows *everything* about the physical properties underlying colour experience. As Dennett (1991, p. 399) puts it: 'The reason no one follows [Jackson's] directions is because what they ask you to imagine is so preposterously immense, you can't even try.'

Potential scope being reliant on internal factors specifically involves the dynamic where the meanings which result from applying a theory of meaning rely on the set of principles specific to the theory and the relevant domains. Invariantist theories will return the same answer for each scenario involving the same instantiator but this reliability requires that all associated domains are specified such that they incorporate the requisite influences. Without a domain, the relationships grounded in said principles would lack participants to substantiate the exact meaning the theory would attribute to a given instantiator. Without any principles, designated domains would just be sets of non-meaning defining states of affairs. If this relationship is treated as a function with three variables then any of the three can be specified in terms of the other two. While a theory standardly applies the other two factors to derive meanings, if the acceptable values for meaning can be approximated, then combining them with the invariant set of rules yields the appropriate domain for that result. Specifying potential scope therefore involves identifying some expected meaning which would be attributed to a given instantiator and reverse engineering the process of how said meaning would be derived by identifying the necessary influences and recording their available positions. The first task is identifying those expected meanings without them having to be systematically derived. The second task is identifying the requisite influences to reach that result before they can finally be mapped to form a domain with a distinct minimum scope. For any given example like this, one may also identify other compatible influences based on the principles at play. If their inclusion would change the resulting meaning beyond acceptable variation, the limits of the corresponding do-main must exclude said entities to retain the original expected meaning. Thus, one may set an upper limit for the domain in this manner where applicable and refine it further by analysing more cases.

That theories of meaning rarely operate in a completely bottom-up manner where a set of circumstances is related to the proposed principles and the results emerge independently of other considerations ought not be a controversial claim. Part of their justification comes from matching pre-existing judgements of meaning for familiar entities such as ‘milk’ *somehow* relating to the liquid mamma-

ries secrete.[34] The evaluation of any example derived using the principles a theory proposes is dependent on a pre-established standard, and only examples cohering with such standards to a satisfactory degree become included. Looking at any example within the literature – including Travis (2008) cases – demonstrates as much: if the invoked meaning was without precedent (e.g. 'therefore, "milk" denotes whatever a bird mother regurgitates'), the fault would be attributed to the theory. The question becomes how the standard a theory applies can be identified. The source of such evidence are still the exemplars: these cases set a precedent on which any extrapolation must be based.

Cursorily, one may identify three kinds of external standards: (1) manifest, (2) public, and (3) formal. A theory may utilise a combination of such standards as well. Manifestness involves personal experience of a meaning – intuitions – and it is especially important to pragmatically oriented theories. For instance, Recanati's (1989, pp. 309–315) *Availability Principle*[35] explicitly grants priority to intuitive judgements of manifest content as the grounds for the involved judgements (e.g. Devitt, 2012). Contextualist approaches are particularly reliant on standards of manifestness because of their use of particularised scenarios for which *codified* precedent is generally unavailable. As Bach (2002) and Devitt (2012) argue, such evidence need not be considered authoritative, though. Another substantial standard are public records: dictionary definitions as standardised conventions, expert consensus, and so forth. Deferential externalism (e.g. Putnam, 1975) provides an especially clear example of such standards being applied: understanding based on individual competence would be

[34] As the case of 'almond milk' shows, a simple definition such as 'milk is the liquid secreted by a healthy and active mammary' is insufficient since at least some uses are either derivative or otherwise beyond the definition. The definition could of course be appended to include a disjunctive condition about other liquids used to serve some of the functions of the mammarian liquid in the relevant society. However, the need for such additions could instead be superseded by either directly functional definitions or non-definitional models of determining referents.

[35] 'In deciding whether a pragmatically determined aspect of utterance meaning is part of what is said, that is, in making a decision concerning what is said, we should always try to preserve our pre-theoretic intuitions on the matter.' (Recanati, 1989, p. 310). Recanati aims to distinguish 'what is said' from formal sentence meaning as a contextually enriched level inclusive of it, with the former treated as what is consciously available for inferring further pragmatic effects (Ibid. pp. 309–315).

irrelevant for meaning. Finally, formal standards include forms of adherence to rules such as propositional completion and formal logic. Some may even be proposed as part of the theory itself, assuming that said formalisation is presented as explanatorily vital for some linguistic phenomenon such as grammaticalisation. For instance, combinatory categorial grammar (e.g. Gildea & Hockenmaier, 2003; Steedman & Baldridge, 2006) uses matrices of statistical co-occurrence as a formalised factual basis for identifying semantic roles like agent or patient position in a computable manner.

In practice, then, one ought to analyse which pre-existing standard the provided exemplars are approximating. Once the underlying standard has been settled, one may either consider further strongly intuited cases of the kind relevant to the type of meaning under consideration (e.g. utterance meaning in communication) or check the public record for other applicable candidates depending on the standard in question. Ultimately, this process is intended to simulate generating new examples appropriate for the task the theory addresses while respecting the targets the author would have considered given the resources available to them. To provide an example, consider how exemplars within relevance theory (Sperber & Wilson, 1996; Carston, 2002) often rely on two-part dialogues where the first contextualises the second. The first line is familiar or presumed self-explanatory within the general context being invoked (e.g. asking for the time from a stranger in public) while the second and its variants illustrate the pragmatic effect being highlighted. Being a contextualist theory, relevance theory primarily relies on agreement in terms of judgements of manifest meaning. An additional factor which analyses of contextualist theories must accommodate to avoid immunising these theories from falsification is updating the context to match the preliminary scope being applied. The reason is how the total context shifting as a result of the scope adjustment would change the prediction because of contextualist theories' high sensitivity to various factors. However, since the focus lies on a theory's principles, one need only find the point where mounting disagreement with the results turns them indefensible.[36] This is more akin

[36] Being a *cognitive* contextualist theory, relevance theory is actually mostly immune to effects of scope since all the relevant relations occur locally, within the realm of the mutually manifest (or

to standard use of counterexamples but scope analyses' significance includes helping identify the range within which such counterexamples avoid begging the question in the form of applying a scope distinct from what the theory treats as acceptable.

Once the standard a theory applies has been identified and an example chosen accordingly, one must identify which influences would be required to reach the expected result given the principles the theory includes. Uniform methodological principles are hard to recommend for this task given the variety of theories, but some common *strategies* apply. The most basic approach is taking the central entities involved and checking whether they suffice for the result. If an explanatory gap remains, the corresponding complements must be added by first stating the issue and then shortlisting potential means of resolution within the theory's framework. Since the very process of analysing meaning within default semantics (Jaszczolt, 2005; 2016) mirrors this task of identifying a total set of influences,[37] it allows illustrating the principle. For any given merger representation – a construct representing the total semantics of a situated unit of analysis (Jaszczolt, 2016, p. 80) – one would first need to check which kinds of defaults inform the meaning attributed to it: world knowledge, linguistic features, situation of discourse, cognitive effects, or societal stereotypes. Thus, for instance, to interpret a toddler pointing at Snoopy and excitedly muttering 'bow-wow', one would certainly need to account for the situation (Snoopy is being indicated) and societal stereotypes (English uses 'bow-wow' to represent canine barking). However, these primary considerations are deficient and further world

what is treated as such): perceptible or inferable to each participant, as far as they are aware (Sperber & Wilson, 1995, pp. 39–43). However, since manifestness itself is graded and such grading can at least partly be correlated with forms of distance such as memory in relation to time and counterfactual difference with cognitive effort, at least an optimal operating range could be defined. Namely, cognitive distance can be graded based on general human capacities, and the influences required for analysed cases can be associated with positions across that range. The optimal operating range of a cognitive contextualist theory corresponds to the spread of influences required for the typical cases for which people possess congruent intuitions. The more this range extends beyond reasonable cognitive reach, the more the required potential scope exceeds ideal scope.

[37] 'DS focuses on identifying a *unit* that is most worthy of a semantic analysis, followed by identifying the *sources of information* that provide the addressee with this unit and the *processes* that uncover the intended information or, on some occasions, co-construct the semantic content in the interaction.' (Jaszczolt, 2016, p. 78, emphasis in original)

knowledge such as that Snoopy represents a dog and that toddlers occasionally use onomatopoeic sounds as nouns (or the toddler equivalents of such beliefs) would be required to properly represent the involved considerations. Once a satisfactory set is identified, these considerations can be matched with corresponding influences based on the types of relations the theory allows. Default semantics being a cognitive theory entails that the representing neural states would be included but the focus on shared defaults grounded in external circumstances would possibly allow extending the analysis to them similarly to the context of cognitive contextualist theories.

Another strategy would involve first analysing the conditions for occupying different positions within the definitive, meaning-endowing relations a theory involves. The process is similar to that recommended for identifying necessary conditions for instantiators' material identity but for different positions. Where instantiator identity is tied to being the recipient of influences and the signifier toward observers, sources of influence occupy the rest of the positions for the former type of relation which targets the instantiator. As recommended above, this approach involves specifying the affordances for which the relations in question are primed and then recording the features required of entities which may co-instantiate said affordances such as how classic denoting requires existence.[38] Once the relevant set of relations has been analysed thus, the results can be applied to the sets of entities associated with domains of various scopes and each applicable influence would be designated. One may then define the resulting meaning when accounting for the total set of influences within a given domain and check that against the identified standard. The furthest extent at which the results match the acceptable range of variation set by the standard a theory applies would provide the potential scope of the theory – or at least the best available approximation relative to the accounted for set of examples.

The first strategy helps provide a minimum threshold which may well exceed implemented scope while the latter – when available – caps the range of potential

[38] Strawson's (1950b) interpretation of Russell (1905) assumes as much, at least, whether this is necessarily true or not. Thus, claims attributing features to fictional entities (e.g. Sherlock Holmes) would be necessarily false under the theory of definite descriptions if this interpretation is eligible.

scope. In either scenario, once the relevant influences have been identified for a situation representative of the appropriate instance, they need only be mapped onto the scales applied to each dimension to help identify the most extreme coordinates relative to the scales' functional categories. By combining the two proposed strategies, one may identify *required* influences for each analysed case as well as *allowed* influences for said cases, assuming open-ended scope. The two are distinct. Required influences outline the bare minimum: at least scope wide enough to accommodate them across cases must be achievable using whichever principles the theory applies to derive scope. Allowed but not required influences each represent a risk to the theory: if their effect modifies results beyond the range the applied standard sanctions, they effectively incur a counterexample to the theory. To limit the effects of extraneous allowed influences, scope must be restricted not to include any which would endanger the theory. This provides an upper limit on the potential scope a theory supports. If one were to imagine two line graphs which result from connecting the outermost required influences and the outermost viable and allowed influences, respectively, any space between them would represent the available range for potential scope. Consequently, should the two lines ever intersect beyond coinciding, the theory is proven unviable: its results require scope beyond what it may support before incurring subversive results. Either the standard or the principles must be edited.

This approach to scope oversimplifies matters by assuming a default scope across the instances a theory covers but it acts to ground a more considered attitude towards scope. Without explicit or readily retrievable principles for defining scope, until the grounds for variation can be identified, treating scope as uniform across instances provides a working model to be adjusted once such grounds become evident. This form of working model is relative to the earlier discussed invariants characteristic of the theory itself, mainly the incorporated observer positions and the features of the set of defining relations. However, should a theory relativise the domains for specifying meaning to situational particulars, the resulting scope would need to be systematically adjusted for each instance. The simplest case of such variable scope involves linking it to the perspective of a positioned processor – not

only by using relations requiring their access but in principle, such as by defining a domain of access which accommodates more incidental variation such as attention, orientation, and so forth.[39] Similarly, while the outermost coordinates for necessary influences would usually provide the means to outline minimum scope for the associated instances, if they are outliers relative to a more standard distribution, conditional solutions to accommodate them might be proposed. These values cannot be simply bracketed: they still contribute to understanding what the theory requires when applied to the associated cases, and if said cases must be accommodated, these values cannot be ignored. Instead, minimising their impact might involve identifying common denominators among the cases in question and forming a sub-theory for their meaning which appends the main theory such as how minimal semantics (Borg, 2004; 2012) treats indexicals as a special case of controlled, non-pragmatic context-sensitivity. Should such a solution be available, one may affix a conditional to the required scope extension and avoid needing to accommodate influences within that sphere across all instances, thereby mitigating the risk of undue influences incurring counterexamples to the theory.

So, to approximate the potential scope a theory of meaning may support given its defining principles, one should (1) identify a standard for expected results set by exemplars' precedent, (2) list the influences the theory requires and those it allows, and (3) map the associated coordinates on the relevant axes to express the range of involved domains. Based on the results, further adjustments may be possible: if any outlier results are consistently associated with recognisable special cases, their requirements may be accommodated conditionally, and other patterns might be explained using situationally relative criteria for scope. The results express the limits of the principles a theory employs – its potential in terms of the reach within which it may accommodate considerations while remaining consistent with

[39] While no formalisation of the notion is attempted here, a factor is considered more incidental when the counterfactual alternatives are more manifest and immediate. The observer having looked one way rather than another in part defines their domain of access but it is more incidental than whether they were wearing infrared goggles at the time unless a pair is immediately available.

established precedent. Assuming that one may anticipate influences involved with examples while constructing the sample cases, the baseline set by the implemented scope can guide the search by expressing the author's focus and potential blind spots. Regardless of whether the associated aspects of scope become integrated into the theory as a result, accounting for them helps complete the partial understanding provided in text. An author must divide their attention across a variety of considerations among which ensuring that examples provide a maximally inclusive impression of the limits of the theory does not rank high. Meanwhile, the analyst who applies these further checks has a less open-ended task which allows stricter methodology and a deeper focus on specific details the author might be prone to overlook.

6.3.3 Extracting Ideal Scope

Finally, ideal scope can be determined based on the requirements of the task the theory sets for itself, and it in turn provides a threshold the theory's potential scope ought to meet. When the task is commonly recognised, any existing consensus on its requirements provides a baseline from which to proceed. While such consensus is fallible, applying ideal scope is limited to the best available approximation. Independent arguments to sway the community would need to be provided separately when the standing opinion appears deficient or misguided, and if they are processed appropriately (i.e. no justifiable criticisms emerge), the results provide the new baseline – whether changed or unchanged. The guidelines below are intended as grounds for such arguments in the absence of an explicit prior consensus and possibly even the presence of an uncritical communal perspective. They address some general features various available tasks may involve and aspects of scope associated with said features. This list is by no means comprehensive. It is only intended to present an approach through examples which relate to each of the involved three dimensions. The four features addressed here are (1) detached objectivity, (2) reliance on presence, (3) non-actualism, and (4) conditionality.

While this thesis treats the ideal of detached objectivity (e.g. Nagel, 1986) as problematic when it becomes privileged as a general criterion for ranking views,

the ideal has its proper applications. Such tasks would include tasks involving absolute[40] rather than relative phenomena, and in the context of theories of meaning, one example would be attempting to define singular referents for proper names (e.g. Russell, 1905; Kripke, 1981; Jackman, 1999; 2005). This kind of *true-naming* relies on detached objectivity since the inherent singularity condition requires ensuring the absence of multiple applicable referents which in turn requires accounting for a total view of the world. That a spatial dimension should be involved is mostly obvious given how the applicable referents themselves occupy space. While an absolute view would engender limitless spatial scope, this dimension would also be included for bounded approaches like Austinian takes (e.g. Barwise & Perry, 1999). Meanwhile, temporality is involved for all absolute approaches to true-naming which do not subscribe to presentism. If names were accepted to change referent based on historical context, the view would be time-relative rather than absolute. Thus, non-presentist absolute views are obligated to cover the totality of periods which they treat as existent – up to and including the future in some cases. Temporal externalism (Jackman, 1999; 2005) being inclusive of the future shows how this principle may be extended in that direction when the future's metaphysical status is not treated as isolated or unidirectionally dependent on the present. A task being defined in terms of the sorts of absolute values which demand detached objectivity to be applied in order to be derived makes ideal scope inclusive of the spatial and temporal dimensions to the highest available degree considered metaphysically relevant by the consensus. Unless claims involve modal necessity like Kripkean rigid designators (Kripke, 1981, pp. 47–49), a modal dimension *need* not be involved but other factors other than detached objectivity may invite such considerations depending on the task.

Reliance on presence is another feature a task may involve and which entails the involvement of both extended spatial and temporal scope. This feature involves accounting for factors based on their presence or lack thereof. While other features may entail a degree of presence (because any physical entity possesses it), *reliance*

[40] Or perhaps more appropriately 'world-relative' wherein the designated domain of worlds – mainly just actuality – yields invariant results.

on presence makes presence (or absence) itself a decisive factor. To illustrate associated tasks, consider attempting to define objective context in the vein of Kaplan (1989) as opposed to the subjective context with which cognitive theories like relevance theory[41] operate. While considerations of the kinds the former involves may enter the latter through awareness, an objective context would exist independently of being recognised. Thus, under such a framework, indexical expressions such as 'today' would reference the present day rather than the intended day when the speaker is confused about the date.[42] Spatial and temporal scope becoming involved stems from relative presence being gradable but also *all-inclusive* in terms of spatial relations and past-oriented temporal relations when a non-positioned perspective is applied. Even for positioned perspectives, presence seems more encompassing than would suit such tasks: recollection makes everything in (conscious) memory available to a degree even when parts might be situationally inaccessible. Thus, setting thresholds to restrict the associated forms of scope becomes necessary for meaningful distinctions between the present and the absent. Consider once more discussions of the context provided by prior discourse (e.g. Heim, 1982; Clark, 1996; Stalnaker, 1996) which is exemplified in defining the referents of mentions involving definite articles or non-demonstrative uses of indexicals.[43] While immediately preceding mentions or referents co-presented in the same utterance only require minimal scope, not all cases are as simple. For instance, exchanges in person and email correspondences involve different degrees of delay between responses. While spatiotemporal considerations might not preclude immediately preceding comments from contextualising the next contribution, the acceptable degree of separation in terms of turns taken

[41] 'The set of premises used in interpreting an utterance […] constitutes what is generally known as the *context*. A context is a psychological construct, a subset of the hearer's assumptions about the world.' (Sperber & Wilson, 1995, p. 15, emphasis in original)

[42] A cognitive theory also allows for a similar, *demonstrative* sense of 'today' even if the mechanism differs from the expression itself indexing to the date. However, such theories generally also allow for possibilities such as 'today' in the utterance 'I have a dentist's appointment today' designating an *intended* calendar date instead. Under such circumstances, if the person is mistaken about the actual date and corrected, they might well retort 'Right, I meant it was *that* day but got confused.'

[43] These cases would include mentions of 'they' which denote a person or people mentioned but not presented such as in the sentence 'I know many dog owners and they all love their pets.'

seems affected: at least in practice, slow-paced correspondence allows referencing fewer steps back. Without *some* restrictions, then, one would be forced to default to a position parallel to dialogism (Bakhtin, 1981; 1986) where every element of an utterance participates in a context defined by the trace presence of *every* preceding utterance in human history. Hence, reliance on presence tends to entail not only the inclusion of spatial distance and past-oriented duration but also constraints on both.

Modal considerations *needing* to be addressed instead of them being extra or just part of a specific approach might initially seem harder to imagine than either of the preceding examples. The next two examples are intended to show that such matters are not peripheral to theories of meaning. The first feature which invites modal scope needing to be defined is *non-actualism*. This feature is shared by all tasks which cannot be resolved while restricting oneself only to properly actualised facts. Idealisation is perhaps the main form of non-actualism, and the corresponding modal scope concerns the degree of variation appropriately represented by the idealised model. Consider, for instance, a claim about causation between two events such as 'if a person utters "green" then their utterances expresses the concept of being coloured green'. While this claim would be an over-simplification since it fails to account for ambiguity, the general principle resembles the core tenets of invariantist or literalist theories like minimal semantics (Borg, 2004; 2012). The forms of difference involved in the example include the range of what counts as a person, which forms of utterances count as instances of 'green',[44] and the subjective variation on concepts of green based on categorising borderline cases (e.g. shades of cyan). Should such considerations seem universal to theories of meaning, the conclusion ought to be that modal scope is implicitly present in each to *this* extent rather than that it cannot be present when not addressed. General explanatory frameworks just necessarily rely on a degree of idealisation since people lack access to the totality of the actual

[44] Especially verbal utterances, in virtue of the different medium, never contain 'green' but rather, [gɹiːn], [gɹin], possibly [gʁyːn], and so on. The last example is for the German 'grün' but whether cross-linguistic variation matters is another modal consideration. If the underlying concepts for each fall within the accepted range of variation, perhaps [ˈʊihreæ] ('vihreä' which is 'green' in Finnish) would also qualify. Such choices to include or exclude define the corresponding modal scope.

cases where the relevant dynamics apply. Meanwhile, the contrast cases without any such modal scope would be presented by the ideal which eliminative materialism propounds where explanations would eventually be based on complete knowledge of physically tractable processes.[45] In the absence of such comprehensive models of the actual, general theories are forced to idealise and only explanations of particular instances may avoid the associated modal scope but such total access would potentially enable non-idealised general explanations. Therefore, as the eliminativist ideal shows, alternatives exist and accounting for non-actualism is not immaterial.

In a similar vein, *conditionality* is a feature of tasks involving explanatory power beyond the actual (or known extent of it). In this context, the term refers to explanations which can afford inputs beyond the actual and yield systematic outputs for them. In effect, the core principles of theories attempting such tasks yield conditionals rather than non-conditional assertions. For example, theories of meaning involving embodiment can be considered a source of such conditionals where the antecedent consists of a set of embodied affordances (e.g. sense of directions based on gravity conditions and physiology) and ecological factors based on their distribution (e.g. eventual resulting linguistic conventions and manufactured designs). When Lakoff and Johnson (1980, p. 57) invoke imagining a spherical being living outside gravitational fields, one may interpret this in part as the suggestion that whichever general principles of embodiment engender human experience would help approximate the results of alternative scenarios. Even in the absence of positive predictions, at least negative contrasts based on absence of required conditions would be available (e.g. the sphere has no access to an invariant sense of up and down based orientation). For purposes of defining associated ideal scope, modality enters the picture because the required theories are effectively of a higher order where they ex-

[45] 'Eliminative materialism is the thesis that our commonsense conception of psychological phenomena constitutes a radically false theory, a theory so fundamentally defective that both the principles and the ontology of that theory will eventually be displaced, rather than smoothly reduced, by completed neuroscience. Our mutual understanding and even our introspection may then be reconstituted within the conceptual framework of completed neuroscience, a theory we may expect to be more powerful by far than the common-sense psychology it displaces, and more substantially integrated within physical science generally.' (Churchland, 1981, p. 67)

plain how the set of rules present in actuality emerges and how counterfactual conditions would affect the results. Each such theory is still grounded in actual data from whence they extend based on the continuity between conditions to the point where any required common ground breaks down.[46]

As these examples demonstrate, one may infer necessarily involved aspects of ideal scope based on the nature of the task a theory attempts. Involved dimensions and directions are more available in this manner but minimal distance ought to also be retrievable based on the cases considered definitive of the task. As noted above, ideal scope is often subject to a degree of uncertainty which allows theories' potential scope to often act as a measure of the distances involved. Hence, defining any involved dimensions and available directions takes precedence. The general advice to be gleamed from these examples is to consider what features a task involves and then to first analyse which dimensions the feature invites. In particular, time tends to get involved when the required elements must occur in sequence (e.g. discourse context) and modularity is implicit in any aspiration to capture explanations more general than required by the recognised facts. By congregating such results, not only would one receive a combined set of involved aspects of scope but also a weighing of the different dimensions and directions based on how central the associated features are and how often each such aspect recurs. Addressing any potential emergent effects from multiple features is beyond the capacity of this work.

6.4 Takeaway

Considering the limitations incurred by how inclusive any conception of a theory may be because both conceivers and texts are limited with respect to the extent of what they may represent guides attention to the scope they in fact manage to implement. However, such implemented scope is obviously not going to be representative of

[46] Given the associations with the name, 'embodiment' might appear to require some forms of bodies, for instance. While that example illustrates the idea, the core principles are more concerned with modes of being in general. The break which makes non-embodied forms of existence invite is more reliant on any speculation based on the relevant principles being fully non-verifiable since non-embodied beings are either non-existent or at least epistemically inaccessible.

the full potential of what the explanatory model a theory provides may successfully accommodate. Recognising that the versions with which people operate are limited in this fashion by largely incidental circumstances allows for the disparity between expectations and actuality to be addressed. Extracting the scope being implemented reveals which available directions are not represented which in turn enables testing whether the theory *may* account for such considerations (e.g. counterfactuals). Similarly, the limitations on what different theories may account for poses the question of what they *should* account for, given these theories' professed purposes. There exists no axiom stating that the more inclusive theories are inherently better. For specific tasks, it may be justified to limit the considerations being accounted for, such as when only the sources reliably available to actual processors of meaning matter.

The provided model of such scope is inclusive of three dimensions: space, time, and modality. For each, it is possible to define both the directions being accounted for and the distance in a given direction which a theory accommodates. In this instance, modality is measured relative to degrees of differentiation along various axes between the scenarios bounded relative to both spatial and temporal scope. Thus, for example, a theory might be suited to accounting for counterfactual scenarios so similar to reality that any differences can be attributed to singular decisions occurring during an exchange but not for the range of potential meanings related to realistically possible circumstances affecting choices of formal definition.

Different forms of scope can be defined for each theory relative to said details. Among them are those discussed above: implemented scope, potential scope, and ideal scope. Implemented scope is the extent of the considerations being presented within a specified corpus which expresses a theory and the resulting conceptions. Potential scope expresses the range within which the posited principles operate as intended by their application resulting in meanings that match whichever standard the theory is using. For instance, a theory which promises to explain how meaning in communication approximates dictionary definitions would need the principles it applies not to register influences resulting in a more inclusive referent. Ideal scope

is defined relative to whichever task the theory is addressing such as specifying proper referents. It effectively consists of the agreed upon range at which all requisite considerations are being accounted for without extraneous distractions being invited.

Each form of scope associated with a theory can be extracted using a distinct method. Specifying implemented scope makes direct use of the representations of theories content based on definition 2: you check what elements are described or required to be imported and what their positions relative to the instantiator are on an appropriate ordinal scale. Potential scope can in part be outlined by expanding from this baseline and checking at which point doing so begins inviting counter-examples where the influences aggregated over a domain of that scope no longer match what the theory would predict. In effect, the potential scope of a theory consists of the extent of the domains wherein applying the principles of the theory results in the meanings predicted by the standard it applies. This extent may vary based on some independently motivated modulating principle – scope need not be treated as a static value in every instance. Unlike the other two types, ideal scope cannot be extracted from the details of a theory as such. It is negotiated relative to the task which the theory attempts, even if specific details embodied by such tasks can hint at least at necessary inclusions. The simplest example is how any theory of absolute meaning ought to be maximally inclusive, at least spatially.

The considerations, models, and methods presented in this work are at best a tentative step in exploring the potential value of approaching theories of meaning as the range of conceptions afforded by specified sources. However, both instantiator identity and considerations of scope are highlighted by this framing. Ideally, being able to recognise and systematically detail such aspects of theories of meaning should help open new avenues of discussion that help settle what is considered acceptable in these respects. While surprising results cannot be guaranteed, at the very least, these methods provide the means to confirm what is the case. Yet, it also remains possible that such avenues *do* allow theories to be seen in a new light when differences in related presuppositions are brought to the fore.

Appendix 01: Formal Definitions

The values of variables (*m*, *n*, *q*, *x*, *y*, *z*) are non-negative integers, where zero denotes the empty set $\varnothing$. Variables *m*, *n* and *q* denote the number of variations and variables *x*, *y*, and *z* arbitrary variants. Superscripts identify a related type of set and subscripts specific variants of elements or subsets.

Definition 1, Constituents of Situations (General):

$S_x = \{O, P, R, A, C\}$

$E = (O \cup P \cup R \cup A \cup C) = \{e_1, e_2, \ldots e_n \mid n \geq 0\}$

$O = \{o_1, o_2, \ldots o_n \mid n \geq 0\}$

$P = \{\langle p_1, e_1\rangle, \langle p_2, e_1\rangle, \ldots \langle p_m, e_n\rangle \mid m \geq 0, n \geq 0, \{e_1, e_2, \ldots e_n\} \cap O\}$

$R = \{\langle r_1, E^*_1\rangle, \langle r_1, E^*_2\rangle, \ldots \langle r_m, E^*_n\rangle \mid m \geq 0, n \geq 0, E^*_x = \langle e_1, e_2, \ldots e_n \mid n \geq 2\rangle,$
$(E^*_1 \cup E^*_2 \cup \ldots E^*_n) \cap O\}$

$A = \{E^\dagger_1, E^\dagger_2, \ldots E^\dagger_n \mid n \geq 0, E^\dagger_x = \{e_1, e_2, \ldots e_n \mid n \geq 2\}\}$

$C = \{(l_1, t_1), (l_1, t_2), \ldots (l_m, t_n) \mid m \geq 0, n \geq 0\}$

Explanation of Definition 1:

S_x: specified situation

E: set of elements in the situation

e_x: element of a situation

O: set of objects in the situation

o_x: instantiated object

P: set of properties

p_x: type of property

$\langle p_x, e_y\rangle$: p_x is instantiated by e_y

R: set of relations

r_x: type of relation

$\langle r_x, E^*_y \rangle$: r_x is instantiated by the elements of E^*_y

A: set of partial states of affairs

C: set of spatiotemporal coordinates

l_x: specific location

t_x: specific time

Definition 1.1, Constituents of Situations (Attributed):

$S_x = \{O, P, R, A, C\}$

$E = (O \cup P \cup R \cup A \cup C) = \{e_1, e_2, \ldots e_n \mid n \geq 1, e_x \in \langle r_y, E^*_z \mid E^*_z \cap E^c \rangle\}$

$E^c = \{e_1, e_2, \ldots e_n \mid n \geq 1, e_x \in \langle p^c, e_y \rangle\}$

$O = \{o_1, o_2, \ldots o_n \mid n \geq 0\}$

$P = \{\langle p_1, e_1 \rangle, \langle p_2, e_1 \rangle, \ldots \langle p_m, e_n \rangle \mid m \geq 0, n \geq 0, \{e_1, e_2, \ldots e_n\} \cap O\}$

$R = \{\langle r_1, E^*_1 \rangle, \langle r_1, E^*_2 \rangle, \ldots \langle r_m, E^*_n \rangle \mid m \geq 0, n \geq 0, E^*_x = \langle e_1, e_2, \ldots e_n \mid n \geq 2 \rangle, (E^*_1 \cup E^*_2 \cup \ldots E^*_n) \cap O\}$

$A = \{E^\dagger_1, E^\dagger_2, \ldots E^\dagger_n \mid n \geq 0, E^\dagger_x = \{e_1, e_2, \ldots e_n \mid n \geq 2\}\}$

$C = \{(l_1, t_1), (l_1, t_2), \ldots (l_m, t_n) \mid m \geq 0, n \geq 0\}$

Explanation of Definition 1.1:

S_x: specified situation

E: set of elements in the situation

e_x: element of a situation

E^c: set of constituents of the core entity

p^c: the property of having been designated as a core entity

O: set of objects in the situation

o_x: instantiated object

P: set of properties

p_x: type of property

$\langle p_x, e_y \rangle$: p_x is instantiated by e_y

R: set of relations

r_x: type of relation

$\langle r_x, E^*_y \rangle$: r_x is instantiated by the elements of E^*_y

A: set of partial states of affairs

C: set of spatiotemporal coordinates

l_x: specific location

t_x: specific time

Definition 1.2, Constituents of Situations (Attributed; Observed):

$S_x = \{O, P, R, A, C\}$

$E = (O \cup P \cup R \cup A \cup C) = \{e_1, e_2, \ldots e_n \mid n \geq 1, e_x \in \langle r_y, E^*_z \mid r_y \in R^b, E^*_z \cap E^c \rangle\}$

$E^c = \{e_1, e_2, \ldots e_n \mid n \geq 1, e_x \in \langle p^c, e_y \rangle\}$

$R^b = \{\langle r^b_1, \langle W, \langle r_1, E^*_1 \rangle\rangle\rangle, \langle r^b_1, \langle W, \langle r_1, E^*_2 \rangle\rangle\rangle, \ldots \langle r^b_m, \langle W, \langle r_n, E^*_q \rangle\rangle\rangle \mid m \geq 1, n \geq 1, q \geq 1, E^*_x \cap E^q\}$

$W = \{\langle I_1, \langle I_2, \ldots \langle I_n \rangle\rangle\rangle \mid n \geq 1, I_x \in I\}$

$I = \{I_1, I_2, \ldots I_m \mid m \geq 1, I_x = \langle\langle (l'_1, t'_1), D^*_1 \rangle, \langle (l'_2, t'_2), D^*_2 \rangle, \ldots \langle (l'_m, t'_n), D^*_q \rangle \mid m \geq 2,$

$n \geq 2, q \geq 2, \langle (l'_x, t'_y), D^*_z \rangle \in U\rangle\}$

$U = \{\langle (l'_1, t'_1), D^*_1 \rangle, \langle (l'_2, t'_2), D^*_2 \rangle, \ldots \langle (l'_m, t'_n), D^*_q \rangle \mid m \geq 1, n \geq 1, q \geq 1, (l'_x, t'_y) \in N,$

$D^*_z \subseteq D, D^*_z \neq \emptyset\}$

$N = \{(l'_1, t'_1), (l'_1, t'_2), \ldots (l'_m, t'_n) \mid m \geq 1, n \geq 1\}$

$D = \{d_1, d_2, \ldots d_n \mid n \geq 1\}$

$O = \{o_1, o_2, \ldots o_n \mid n \geq 0\}$

$P = \{\langle p_1, e_1 \rangle, \langle p_2, e_1 \rangle, \ldots \langle p_m, e_n \rangle \mid m \geq 0, n \geq 0, \{e_1, e_2, \ldots e_n\} \cap O\}$

$R = \{\langle r_1, E^*_1 \rangle, \langle r_1, E^*_2 \rangle, \ldots \langle r_m, E^*_n \rangle \mid m \geq 0, n \geq 0, E^*_x = \langle e_1, e_2, \ldots e_n \mid n \geq 2 \rangle,$

$(E^*_1 \cup E^*_2 \cup \ldots E^*_n) \cap O\}$

$A = \{E^\dagger_1, E^\dagger_2, \ldots E^\dagger_n \mid n \geq 0, E^\dagger_x = \{e_1, e_2, \ldots e_n \mid n \geq 2\}\}$

$C = \{(l_1, t_1), (l_1, t_2), \ldots (l_m, t_n) \mid m \geq 0, n \geq 0\}$

Explanation of Definition 1.2:

S_x: specified situation

E: set of elements in the situation

e_x: element of a situation

E^c: set of constituents of the core entity

p^c: the property of having been designated as a core entity

R^b: set of relations of observation

r^b_x: type of relation of observation

$\langle r^b_x, \langle W, \langle r_y, E^*_z \rangle \rangle \rangle$: r^b_x is instantiated by W relative to relation $\langle r_y, E^*_z \rangle$

W: set of layers of integration which correspond to the observer

$\langle I_x, \langle I_y \rangle \rangle$: I_x is a single level higher order of integration than I_y

I: set of layers of integration

I_x: specific layer of integration

$\langle \langle (l'_1, t'_1), D^*_1 \rangle, \langle (l'_2, t'_2), D^*_2 \rangle, \ldots \langle (l'_m, t'_n), D^*_q \rangle \rangle$: set of inputs up to $\langle (l'_m, t'_n), D^*_q \rangle$ is ordered according to the format of a layer of integration I_x

U: set of inputs

$\langle (l'_x, t'_y), D^*_z \rangle$: at (l'_x, t'_y), D^*_z applies

N: set of points of access

l'_x: specific location of access

t'_x: specific time of access

D: set of modes of access

d_x: type of mode of access

O: set of objects in the situation

o_x: instantiated object

P: set of properties

p_x: type of property

$\langle p_x, e_y \rangle$: p_x is instantiated by e_y

R: set of relations

r_x: type of relation

$\langle r_x, E^*_y \rangle$: r_x is instantiated by the elements of E^*_y

A: set of partial states of affairs

C: set of spatiotemporal coordinates

l_x: specific location

t_x: specific time

Definition 2, Template for Reframing Theories of Meaning:

$S_x = \{O^g, P^g, R^g, A^g, C^g\}$

$E = (O^g \cup P^g \cup R^g \cup A^g \cup C^g) = \{e_1, e_2, \ldots e_n \mid n \geq 1, e_x \in \langle r_y, E^*_z \mid r_y \in R^b, E^*_z \cap E^i \rangle\}$

$E^i = \{e_1, e_2, \ldots e_n \mid n \geq 1, e_x \in \langle p^i, e_y \rangle\}$

$E^{pr} = \{e_1, e_2, \ldots e_n \mid n \geq 1, e_x \in \langle p^d, e_y \rangle\}$

$O^g = \{o_1, o_2, \ldots o_n \mid n \geq 0\}$

$P^g = \{\langle p_1, e_1 \rangle, \langle p_2, e_1 \rangle, \ldots \langle p_m, e_n \rangle \mid m \geq 0, n \geq 0, \{e_1, e_2, \ldots e_n\} \cap O^g\}$

$R^g = \{\langle r_1, E^*_1 \rangle, \langle r_1, E^*_2 \rangle, \ldots \langle r_m, E^*_n \rangle \mid m \geq 0, n \geq 0, E^*_x = \langle e_1, e_2, \ldots e_n \mid n \geq 2 \rangle, (E^*_1 \cup E^*_2 \cup \ldots E^*_n) \cap O^g\}$

$A^g = \{E^\dagger_1, E^\dagger_2, \ldots E^\dagger_n \mid n \geq 0, E^\dagger_x = \{e_1, e_2, \ldots e_n \mid n \geq 2\}\}$

$C^g = \{\langle r^a, \langle e_1, \langle l_1, t_1 \rangle \rangle \rangle, \langle r^a, \langle e_2, \langle l_2, t_2 \rangle \rangle \rangle, \ldots \langle r^a, \langle e_m, \langle l_n, t_q \rangle \rangle \rangle \mid m \geq 0, n \geq 0, q \geq 0, r^a \in R\}$

$R^b = \{\langle r^b_1, \langle W, \langle r_1, E^*_1 \rangle \rangle \rangle, \langle r^b_1, \langle W, \langle r_1, E^*_2 \rangle \rangle \rangle, \ldots \langle r^b_m, \langle W, \langle r_n, E^*_q \rangle \rangle \rangle \mid m \geq 1, n \geq 1, q \geq 1, E^*_x \cap E^i\}$

$W = \{\langle I^{nw}, \langle I_1, \langle I_2, \ldots \langle I_n \rangle \rangle \rangle \rangle \rangle \mid n \geq 1, I^{nw} \in I, I^{nw} = E, I^{nw} \supseteq I^{pr}, I_x \in I\}$

$I = \{I_1, I_2, \ldots I_m \mid m \geq 1, I_x = \langle \langle e_1, \langle e_2, \ldots \langle e_n \rangle \rangle \rangle \mid n \geq 2 \rangle\}$

$I^{pr} = \{\langle e_1, \langle e_2, \ldots \langle e_n \rangle \rangle \rangle \mid n \geq 2, e_x \in \langle r^a, E^*_y \mid E^*_y \cap E^{pr}, |E^*_y| \geq 1 \rangle\}$

Explanation of Definition 2:

S_x: theory-specific schema for nature of meaning

E: set of elements in the schema for a theory of meaning

e_x: element of a schema for a theory of meaning

E^i: set of constituents of the meaning-instantiator

p^i: the property of having been designated as a meaning-instantiator

E^{pr}: set of constituents of the processor of meaning

P^d: the property of having been designated as part of the processor

O^g: set of generic objects in the schema

o_x: conceived generic object

P^g: set of generic properties in the schema

p_x: type of property

$\langle p_x, e_y \rangle$: p_x is instantiated by e_y

R^g: set of generic relations in the schema

r_x: type of relation

$\langle r_x, E^*_y \rangle$: r_x is instantiated by the elements of E^*_y

A^g: set of generic partial states of affairs in the schema

C^g: set of generic spatiotemporal coordinates in the schema

r^a: relation of arrangement

l_x: relative location

t_x: relative time

$\langle r^a, \langle e_x, \langle l_y, t_z \rangle \rangle \rangle$: r^a is instantiated by e_x relative to l_y and t_z

R^b: set of relations of observation

r^b_x: type of relation of observation

$\langle r^b_x, \langle W, \langle r_y, E^*_z \rangle \rangle \rangle$: r^b_x is instantiated by W relative to relation $\langle r_y, E^*_z \rangle$

W: set of layers of integration which correspond to the observer

I^{nw}: layer of integration corresponding to detached perspective

$\langle I_x, \langle I_y \rangle \rangle$: I_x is a single level higher order of integration than I_y

I: set of layers of integration

I_x: specific layer of integration

$\langle\langle e_1, \langle e_2, \ldots \langle e_n \rangle\rangle\rangle\rangle$: set of inputs up to e_n is ordered according to the format of a layer of integration I_x

I^{pr}: layer of integration corresponding to the positioned processor

r^a: relation of access

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