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Mental spaces and cognitive semantics: A critical comment

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Abstract

The article criticizes the negative influence of modern analytic, anti-semantic and anti-phenomenological thinking on cognitive semantics, and the errors or weaknesses of analysis it induces in current Mental Space Theory (MST). It also shows how a less inhibited theory of meaning, mental spaces and blending could develop more useful analyses of empirical occurrences, such as the artifacts called 'material anchors' and works of art — here exemplified by a painting by Matisse. © 2005 Elsevier B.V. All rights reserved.

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“Our whole problem is to make the mistakes as fast as possible. . .”
J.A. Wheeler¹

1. The problem — short version

Cognitive semantics is the study of meaning in the embodied human mind. The notion of semantics in this context is functional and representational, in the sense that meaning should be approached as it functions in on-line processes of thought and communication,

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¹ Quoted in Denis C. Phillips, “Popperian Rules for Research Design”, *Expanded Social Scientist's Bestiary*, 2000.

and therefore in the mental representations that are active in on-line production of meaning addressing some situation of the cognizer. However, Mental Space Theory (MST) — though claiming to be a branch of cognitive semantics — continues in certain respects to approach meaning as non-representational and as a real-world matter of vericonditionality, and stays in these respects bound to analytic philosophy. Due to this philosophical background view of meaning, which is historically rooted in Spinoza's empiricism and logicism, the analysis in terms of Mental Spaces fails to grasp the dynamic–schematic properties of meaning production and the semantic implications of mapping and blending altogether. It fails to show how meaning actually *makes sense*. I intend to show how the theory could be changed and further developed in order to avoid this blind alley.

2. The ontogenesis of Mental Space Theory

The following is a non-standard account of the principles and problems of Mental Space Theory.² However unusual, the non-standard criticism I intend to offer might elucidate some peculiarities of its current style of research, i.e., of actual analyses using mental spaces and blending. My hope is that this 'problematization' will also help the theory to further develop.

The notion of a *mental space* was born two decades ago — curiously enough as a blend of French discourse linguistics and Anglosaxon analytic philosophy — namely in Gilles Fauconnier's French book on the construction of meaning (Fauconnier, 1984), where it arose in the context of formal logic, philosophy of language, and early (mentalist) cognitive approaches to 'natural language'.³

In his book, Fauconnier first introduces logical 'connectors' that operate on 'mental objects', namely the semantic items appearing in discourse, and then goes on to present and develop a model of connective, mental constructions and their corresponding linguistic processes. These constructions integrate objects into larger units of meaning, the description of which involves the enigmatic entities here represented by logical sets⁴ and called 'mental spaces' — inheriting the adjective 'mental' from the objects they are supposed to contain (p. 32, my underlinings):

A cette fin nous introduisons la notion d'*espaces mentaux*, distincts des structures linguistiques, mais construits dans chaque *discours* en accord avec les indications fournies par les expressions linguistiques. Dans le modèle, les espaces mentaux seront représentés par des ensembles structurés et modifiables — des *ensembles*

² As summarized in Fauconnier and Turner (2002).

³ In the introduction (p. 11), in a note, we learn that "nos préoccupations ne sont pas indépendantes de la philosophie du langage, mais les objectifs sont souvent différents . . . les problèmes sont posés en termes cognitifs et "mentalistes"; la méthodologie est "linguistique": appel au plus grand nombre d'exemples et de situations, possibilité ou impossibilité de telle ou telle forme, ou interprétation." The project concerns the construction of meaning in discourse in so far as its logical reconstruction can be made in terms of a (specially designed) set-theoretical model.

⁴ The set representation of mental spaces soon disappeared and is not to be found in Fauconnier and Turner (2002).

[sets] avec des éléments a, b, c, \dots , des relations satisfaites par ces éléments ($R1ab, R2a, R3cbf, \dots$), et tels qu'on puisse leur ajouter de nouveaux éléments, ou établir de nouvelles relations entre leurs éléments. (Techniquement, un ensemble modifiable est une suite ordonnée d'ensembles ordinaires — il sera commode de parler d'*espace mental construit au fil du discours*, plutôt que de mentionner la suite correspondante d'ensembles.)/Des expressions comme " $Ra_1a_2 \dots a_n$ est valide dans l'espace mental M " signifieront que a_1, a_2, \dots, a_n sont des éléments de M et que (a_1, a_2, \dots, a_n) satisfait la relation R .

What these 'spaces' are, apart from being thus represented by a set model, is never made quite clear. They are evidently not simply formed as arbitrary lists of objects. The first examples⁵ make the reader intuitively think of imaginary settings⁶, situations, or states of affairs. What are they, and what are they not? The question is not trivial, but curiously enough not directly addressed. After having introduced M, R , and the a series (cf. above), the text adds a relation of inter-space *inclusion*, and the notion of *introducers* (space builders):

"les expressions qui établissent un nouvel espace ou qui renvoient à un espace déjà introduit dans le discours . . ."

In this inaugural text, mental spaces are not defined in relation to minds, but in relation to discourse, so they could perhaps as well have been called 'discursive spaces'. In a previous note (p. 24), we are warned against philosophical "possible world" readings, which would imply ontological stances. Mental spaces are not, strictly speaking, possible worlds; but they may be some sort of 'worlds' anyway, depending on the notion of *world* chosen. The issue is left in the note without further comment.

So what is a mental space? The theory of mental spaces (TMS or MST) is now known as a prominent trend in cognitive semantics. But still today it does not technically relate neither to existing disciplines of *textual analysis*, e.g., in literary criticism, literary rhetoric, or poetics, nor to existing disciplines such as pragmatic *discourse analysis*; and its relation to grammar and theoretical linguistics remains almost as rudimentary and 'promising' as in its first days. My hypothesis is that the import from analytic philosophy and particularly its inherited 'logical cognitivism' have blocked its way to a scientifically sound semantics of language, in the sense of real discourse, real text — and of thought, in the sense of real human cognition and communication.

Let me briefly explain my view of the way MST thinks. If we find it meaningful to say things like (Fauconnier, op. cit.: p. 25)⁷:

- Lisa, qui est déprimée depuis plusieurs mois, sourit sur la photo —
- Lisa, qui sourit sur la photo, est déprimée depuis plusieurs mois —

⁵ These examples are not taken from actual discourse, but are fabricated by the author for the sake of illustration, and sound like the following: "Max croit que, dans le tableau de Luc, les fleurs sont jaunes." Where is then the alleged discourse, one may ask.

⁶ The French semiotician A.J. Greimas (1979) would call these imaginary object contexts (figurative) *isotopies*.

⁷ "Lisa, who has been depressed for several months, is smiling on the photo" versus "Lisa, who is smiling on the photo, has been depressed for several months".

then the logical formalization has to make Lisa inhabit two contrasting or contradictory semantic contexts, worlds, or ‘spaces’, one in which she is smiling happily, and one in which she is unhappy and depressed (and consequently not smiling happily). The relative construction of the French sentences is explicative (not determinative) and has a concessive meaning (*qui* . . . here means *despite the fact that she* . . .), so the same sentence can present two versions of Lisa, or two states of Lisa, or two Lisas rightaway, depending on how the analysis goes.⁸ This is grammatically possible, because the two clauses of the sentence have different temporal and vericonditional properties. This is of course more of a challenge to the logician than to the grammarian. If the meaning of a sentence (in logic, a ‘proposition’) is — as analytic philosophers are trained to believe — its truth conditions, i.e., an account of the state of affairs in the real world that would make the sentence (‘proposition’) true, then such a bi-propositional sentence, whose two parts are equally meaningful, we suppose, must be semantically anchored in *two worlds*, mutually contradictory but both real. Lisa must really be both happy and unhappy to offer the truth conditions under which the sentence is meaningful. This paradox of course makes the analytic logician feel uncomfortable. So — since grammatical constructions and what they do are irrelevant or unknown to him and totally unrepresented in his model — because he cannot accept a paradoxical vericonditionality, and so must reject the *realistic* two-worlds solution, he needs to redefine the vericonditional double-world as a *mental* instance, a ‘mental world’ or, still better, a world of unverifiable ‘mental spaces’. Metaphysics is apparently involved here, right from the start. Meanings are treated either as truths or as mental events. This is just what the ancestor of analytic philosophy Baruch de Spinoza⁹ would have done, and in corresponding cases in fact did (in his *Ethics*, 1677): either an idea is true, and its meaning is in its truth, which is in the real physical world, where its reference is found, and there is no difference between the signified meaning and the referential context (so there is no ‘mental space’), or else, if the idea is not true, and there is no referent, then it is a mental affect, an imagination, and it is instead true that there is a physical brain that has it, as if it were a headache. So there is still only one real world, and the principle of truth conditional meaning is saved. But the supposedly ‘lying’ photograph of Lisa is vericonditionally true about the liar, whoever he is. The Spinozist price paid for the salvation is to accept the physical existence of ‘imagination’, here: *mental* spaces. The mind (which is, in this conception, the physical brain) can effortlessly hold two non-worlds, or imaginary spaces. But again, how can they both be meaningful? The logician, in *casu* Fauconnier, who cannot see or care about the grammatical pronoun *qui*, can see the expression *sur la photo* and can see that it builds one of the involved imaginary spaces out of the other: the mental object <photo of Lisa> is present in one space and shows something that happens in the other, while this other space does not contain objects that show what happens in the first space — the photographic connector is thus a one-way sign,

⁸ There need not be any contradiction, of course, since one information concerns Lisa’s appearance (*paraître*) and the other her being (*être*). Depressed persons can smile.

⁹ I have the impression that many contemporary semanticists are not aware of the importance Spinoza’s philosophy, especially the chapter on the Mind, in *Ethica*, has had on modern Anglo-saxon thinking — despite Wittgenstein’s explicit reference. The modern anti-Cartesian campaign, cf. A. Damasio’s books, including his new work on the chapter on the affects (Damasio, 2003), which has been very salient in the cognitive sciences, is entirely Spinozist.

In Fauconnier and Turner (2002), a section “Ways of Thinking About Compositionality”, pp. 162–164, indirectly addresses this issue. In logic, it tells us, meaning is based on truth-conditional compositionality, which can be strict (Fregean) or looser. If strict, “any syntactic combination of propositions that is itself a proposition encodes a computation of the truth value of the whole form from the truth values of the parts.” Compositions have truth tables. Correspondingly, one would expect that “linguistic expressions in isolation have truth conditions that are computable from the truth-conditional properties of their parts.” But even if that goes for [something is] *brown*, [something is a] *cow*, and [something is a] *brown cow*, the truth value of many compositions can only be computed if elements from the context are allowed to come into the computation. In difficult cases like “Athena is the daughter of Zeus” (ibid.), a sufficient specification of the context to include in the computation would have to include information on how Greek mythology lets Zeus be the ‘mother’ of Athene... Still, in such cases, “there is compositionality at the level of the general mapping schemes themselves and at the level of the syntactic forms that prompt for those schemes”. What does this mean? That compositionality is no longer truth-conditional, *Quod Erat Demonstrandum*. Compositions are thus stable mappings that are independent of what they mean. So the compositions “Language is the fossil poetry of the soul” and “Las Vegas is the American Monte Carlo” are both syntactically¹⁴ *NP1 is the NP2 of NP3*. The compositions “Ann is the boss of the daughter of Max” and “Prayer is the echo of the darkness of the soul” (where does this line of dubious poetry come from?) are syntactically identical and have the same mappings. So, from this point of view, here, “the network model shows a relationship between syntactic composition and composition of mappings that holds independent of reference to domains, situations, and contexts.” They are “of”-constructions. Then the authors add, concessively: “Of course, context is all-important — but for the imaginative elaboration of the blends, not for the mapping scheme.” What does this mean? That the blends cannot be understood without a huge, perhaps infinite, display of contextual specifications of elements to include in the computation of truth value, and thereby meaning. The mappings precede the blend, and the mappings are *asemantic*¹⁵ syntactic combinations! *NPx blabla NPy* etc.

I am aware of the fact that the two authors do not follow my criticism on this point, and that they are convinced of having shown, in the section I have been quoting from, that their semantics is not truth-conditional. I can only conclude that plain and simple theoretical debate is not yet on the menu of MST. My references to Spinoza are met by incomprehension and surprise, given that this philosopher is not necessarily on the reading list of cognitive semantics.

The whole issue of involved vericonditionality is still non-standard in current metatheoretical debates. So I assume it still sounds unfamiliar to newcoming scholars. To these readers, a slightly more technical presentation would perhaps be more suitable. Let me rephrase the basic question. Why are certain propositions containing conflicting

¹⁴ The reference of this form to noun phrases, the predicate *is* construction, and the genitive *of* construction, is syntactic in the Chomskyan sense, i.e., independent of semantics.

¹⁵ The combinations may well be semantically meaningful but the syntactic structure relevant to the mappings is indifferent to what they mean; so the relevant syntactic structure has *asemantic* relevance.

predications possible, why are they meaningful instead of being impossible, why are they not meaningless since they should be self-contradictory, such as all metaphorical propositions stating that in a sense, '*something is something else that it is not*'. . . ? The MST explanation, still wrought in analytic terms and thought habits of vericonditionality¹⁶ (semantics is about truth, and to be meaningful is to be true in some world; meaning is thus reference), is the fresh idea that this '*not*' — in: '*something is something else that it is not*' — does not induce self-contradiction but instead indicates a *contrast* between copresent, competing, and structurally¹⁷ cooperating semantic 'worlds' (in the plural, like fictive worlds; also called fields, frames, domains) underlying propositional meaning. These brave new worlds were then, in 1984, baptized *mental spaces*, as if they were a sort of *places* in 3D space. This new solution to the old problem — of how, e.g., the eyes of a girl could have two different and mutually excluding colors in a sentence about a portrait — lets the theory discreetly produce a new cognitive ontology according to which there is an abstract, purely mental realm in which several separate and simultaneously active 'local-worlds-of-thought' or local semantic wholes (with truth-values) are indeed copresent and actively involved in being parts of a mapping system. There had to be a purely mental region of reality where different representations of things could integrate and form syntactic constructions. There was an urgent need for such an inclusive ideosphere, and there was a mentalistic or 'cognitivist' mode of satisfying it. Construction or composition was now seen as referring to an *inner* reality — a hypothetical world of the mind, in fact a Cartesian *res cogitans*, but, against Descartes, and following Spinoza, essentially unconnected to any *res extensa*, unless we ask for its meaning. The constructional whole is unconnected to any functional meaning it might have.¹⁸ This is still, apparently, the implicit thinking of MST: it is halfway analytic and halfway structural. The problem it is basically supposed to solve is *not* how the *human mind* really works, but instead how an analytic account of paradoxical propositions is still possible, and how it is accessible at the price of referring to the human mind, as an isolated (but according to Spinoza: entirely embodied) *res cogitans*. It corresponds to views of human cognition as a system of unconnected, individual, private, inner processes governed by principles, almost *more geometrico*, in the geometrical manner where content does not matter to form; not because MST subscribes to such a psychological belief, but because its own theorizing is based and relies upon such a way of thinking.

Therefore, MST literature only or mainly offers applications to home-made or decontextualized 'examples', rather than to full-scale empirical occurrences, real texts or situated communications, whether literary or pragmatic. Sense-making in the *semiotic behavior of humans* is not what interests it. Nevertheless, MST seeks ontological support in the actual cognitive sciences (neuroscience, psychology, linguistics, anthropology, etc.) which have a genuine interest in semantics. In this sense, it is indeed 'cognitivist'. But its inherent analytic way of thinking and understanding semantics is indifferent to and

¹⁶ In *Mappings*, Fauconnier (1997) protests energetically (e.g., p. 48) that the new theory is *not* vericonditional. I am here trying to explain why this protest and the view it opposes are both likely to occur.

¹⁷ Here is where vericonditionality gives way to structural semantics, at least in principle.

¹⁸ By functional meaning, I refer to the intentional meaning an utterance has and is understood to have by speaker and addressee. This is the core semantics of communicated meaning, but MST ignores it. So if a joke is analyzed, its mappings and blends can be modeled, but not the reason why it is funny.

incompatible with an interest in studying how the human mind really works, in so far as the mind and its cognitive semantics are not vericonditional or based on inner rumination, but instead is grounded in the conceptual and schematic organization occurring in the very interaction, expressive as well as practical, that incessantly connects real and really communicating human minds.

A cognitivistic and mentalistic semantics of this kind is thus not yet a *cognitive* semantics, the latter being committed to a systematic methodology of research, interacting with existing empirical studies of meaning in all accessible fields, and subscribing to scientific realism and naturalism. It is instead mainly and primarily concerned with the mere possibility of constructional and integrative representation. The way in which humans really *do* represent is then a secondary matter. The main difference between a cognitivistic and a truly cognitive approach is thus that the former only intends to logically *justify* the semantic paradoxes, metaphors, counterfactual conditionals, and so on — by showing that they are still *in principle* possible, and virtually meaningful — whereas the latter intends to obtain a full-scale study of their *reality*, including discussions of the structural and functional grounding of cognitive and affective productions in the architecture of the socially and culturally committed human mind and of its pragmatic and semiotic dispositions. Analytic cognitivism — the historical origin of MST — is essentially but a logico-philosophical¹⁹ representationalism. By contrast, cognitive semantics, and especially cognitive semiotics, intends to study how representational meaning can be modeled as dynamically related both to the imaginary and to the experiential world in which meaning is meaningful.

A “mental space” is one thing in the perspective of formal justification and something quite different in that of an exploration of the *process* of dynamic meaning construction. In the former, it is a new tool of representationalism, whereas in the latter, the notion refers to an all-important semantic phenomenon of a hitherto unknown kind, which seems to be responsible both for the deeply entrenched trivialities of human cognition and for a host of strange and enigmatic occurrences, of unstable and creative structurations that we need to understand in order to make conceptual change and human historicity conceivable. The advantage of MST over cognitive grammar is admittedly its intellectual passion for the bizarre; analyses of semantic monsters are in fact often shortcuts to the understanding of the mysteries hidden in simpler things. But the analyses must learn more from the material analyzed than demonstrations can learn from their own contextless “examples”.

My partial conclusion here is an open question: since, historically, the notion of mental spaces emerged in an analytic context and was developed in a fascinating but profoundly ambiguous logico-cognitivist style, will MST now turn into a genuine part of semantic research that can be interpreted as a *cognitive* discipline and recognized as a significant contribution to contemporary research on mind and meaning? In this case, as in the case of speech acts and performativity, analytic philosophy will once more have, if not made then at least inspired, a substantial contribution to a *scientific* project in which it was itself unwilling to participate.

¹⁹ In the sense of L. Wittgenstein’s Spinozist paraphrase of a Tractatus Theologico-politicus, the Tractatus Logico-philosophicus.

3. Mental spaces and mental architecture

In the theoretical perspective of a semiotic exploration of cognition and meaning, a mental space is not a genetically modified possible world or vericonditional artefact, intended to solve special problems of natural logic (logic in natural language). *Semantics* as such is instead understood structurally,²⁰ and so is the notion of mental spaces. The term ‘mental space’ here denotes a structural format organizing certain contents that human consciousness naturally attends to, and that on a specific level of content organization significantly integrates other important contents formatted on lower levels of integration. Conceptual integration, or semiotic integration more generally, appears to be a useful notion, if we want to understand this principle of leveled meaning. Semiotic integration of meaning takes place stepwise, and if the ‘steps’ or levels are canonical, which I will argue is the case, then the canon forms a *stable mental architecture* whose formats the analysis of meaning can refer to. Sensory processing lets us perceive monomodal *forms*, or qualia, in time and space; and further processing lets us cross-modally identify and categorize *objects* in which such forms are assembled and appear as aspects and properties. So objects are integrations of forms. Configurations of objects are further conceptualized in such spatio-temporal connections to the embodied cognizer that they are imagined or experienced as existing in *situations* relevant to this cognizer as a ‘self’. In this sense, situations integrate objects. These situational units further constitute the complex semantic wholes that orient linguistic and gestural syntax (grammar). They are not only ‘cognizable’ but also communicable and, hence, re-cognizable. It may be their communicability that also makes them accessible to recombination — we can take them apart and combine them in innumerable ways, hence the creativity of semantic construction on their level. They constitute the basic imagery that makes it possible for us to *re-present* items of meaning: forms and objects, events and states, acts and attitudes, instead of just experiencing them and ‘presenting’ them to others.²¹ They are universally shaped as finite, or local (not infinitely extended), more or less vivid and dynamic²² wholes, bounded by the span and margins of our attention; as to their spatio-temporal extension, they can fruitfully be compared to that of dramatic *scenes* performed on the stage of a theatre, and we may think of them as episodes in imaginable plays including ourselves or some character we take as our proxy. These ‘theatrical’ wholes are *mental spaces*. By contrast, single objects, or lists or configurations of objects, are not *per se* mental spaces, but can evoke such superordinate organizers. Similarly and *a fortiori*, single forms, a color, a sound, a feeling, or the contour of a cup, are not *per se* mental spaces.²³ They are preparatory perceptual integrations. But situational wholes, whether imagined or perceived on-line, are indeed mental spaces in this sense. Our episodic memory is theatrical in the sense that it exclusively or predominantly

²⁰ Truth and meaning no longer coincide: truths are relevant to meanings, if they are structural part of meanings — as is the case in irony.

²¹ This stage of cognitive integration is the level of semantics implied in intentional communication in general.

²² A dynamic whole is a scenario dominated by an intelligible force schema — typically rendered in language by deontic, epistemic or other types of modal expressions.

²³ What I am saying is that the integration of *blue* and *cup* in the composition *a blue cup* is not a mental space that ‘blends’ a *blueness* space and a *cupness* space — it is not at the right level of integration, in our mental architecture, for qualifying as a mental space construction.

operates on information from this level of integration — the level of ‘experience’. A cognitive MST will therefore be an important part of a theory of real mental architecture that explores all levels of integration; it will itself explore the ways in which mental spaces further integrate when real higher-order meanings are built, from these situational mental contents, through processes involving what we call conceptual *blending*; reflections, notional meanings, such as those appearing in causal descriptions of events and changes, narrative accounts of intentional doings, normative comparisons and judgments, etc. So reflective, abstract thinking integrates mental spaces in *networks*, of which, admittedly, we presently only know very little. What we do know is that abstract thinking, and therefore conceptual blending, are an important ingredient in emotions and moods: feelings, affective meaning, implied in volition and action planning. *Affects* may constitute an ultimate instance of semantic integration, a top level of mental architecture which also terminally, so to speak, ‘lands’ abstraction in the dynamic embodiment of action, close to where it initially took off in the dynamic embodiment of sensory perception.

Mental architecture would seem to be shaped like an afferent-efferent arch: perceived forms → categorized objects → integrated situations (MS) → action-planning reflections → evaluating affects. Before and after this semantic arch, there is bodily ‘behavior’, including (afferent) sensation and (efferent) action.

4. Semantic domains

Behavior is physical, but can of course not be reduced to simple physical motion and locomotion. It ‘takes place’ in a physical world that has ‘pheno-physical’ and ‘pheno-psychological’ properties such as the fact that it contains intentional communication. The fact that this intentionally informed world is experienced as preorganized in different ‘spheres of experience’, so to speak, may be a phenomenon emerging in our mental architecture on the level of mental spaces and networks of conceptual integration. Conceptualization of realia is importantly specified by these ‘spheres’; for example, kinship-related concepts (such as: Family) are from a sphere different from that of metrical concepts in physical space and time (such as: Distance). In other words, when human beings connect perception and action beyond the semantic arch of ‘levels’ or ‘steps’ in conceptual integration, they do not just move around and sense. They connect perceptive and active behavior in such a way that their action will modify their perception, and their perception will modify their action. And this reciprocal modification will convey a certain general *mode* of experiencing, characteristic of the *sort* of reality the individual is currently attending to and intending to interact with. We might say that the individual subject pre-categorizes its cognitive processing altogether by ‘inscribing’ it in a domain of meaning, a *semantic domain*. Such a domain is a phenomenologically significant ‘region in being’, and we are invited to acknowledge the cognitive existence of a generic and naturally given set of semantic domains, that language, thinking, feeling, and living altogether relate and react to: an articulated phenomenological ontology which is not discourse dependent but that discourse types depend and are based on.

Semantic domains are involved in the sort of predication we call metaphor. As claimed by the theory of conceptual metaphor, mapping relations must show a difference in

semantic domain grounding of source and target contents, if a given predicative expression is to be understood as metaphorical at all.²⁴ Otherwise, the semantics of the metaphorical expression is possibly analogical within one domain. This criterion is not just terminological; if an expression is indeed metaphorical, its immediate figurative meaning mediates a dynamic higher-order meaning (a compelling ‘meaning of meaning’, most often reflective, affective, and evaluative) to which the communicative agents will be sensitive. Metaphoricity of meaning is a particular intentional resource and can therefore even be used as a valid criterion for semantic domain difference. The constellation of semantic domain differences will then hypothetically (Brandt, 2004) yield a picture of a human life-world articulated in a finite series or system of naturally occurring and universally shared semantic domains. From these domains, cognition derives its ‘image schemas’ and the vast collection of relational concepts by which things in all domains are construed. Cross-domain migration of schemas is probably one of the great mental achievements that human language made possible and common; language, in view of its ‘closed-class’ semantics of morphology and syntax, is itself a striking example of schematic migration.

According to my personal investigations, the basic semantic domains, that we naturally acknowledge and distinguish in gesture and language, include: a phenophysical domain (D1), a domain of social interaction (D2), a mental domain (D3), and a speech act domain of direct, face-to-face interpersonal communication (D4). Higher-order domains appear to be built out of the first four by dual combination (example: the domestic domain, housing notions of kinship, marriage rules, nursing schemas, etc. is obtained by combining D2 and D4).

5. Space delegation

The *hic et nunc* of awareness and present thinking is a ‘self-remembering present’, and a presently represented presence, that we experience — I suggest to stipulate — through the mental space format. We also feel that other minds are using the same here-and-now space format while addressing us or attending to our own signs. The finite ‘mental spatiality’ of mental spaces, including the Base space of presently represented presence is a natural product of the mind’s own design and therefore common to human minds and active in all situations of communication, in which minds can experience reciprocal attention. The mental space format of Presence thus allows the individual to semantically structure interactions not only with the surrounding pheno-physical spatiality but also with *other minds*: other individuals, with collective instances, and even with abstract entities of complex socio-cultural domains.

Other minds have other thoughts; the Presence space or general Base space gives us a format for holding ‘my thought’ and ‘your thought’ at once, simultaneously and in parallel,

²⁴ Characteristically, MST intends to avoid this point, and to present metaphor as a subjective matter of imaginative construction of meaning having nothing to do with mapping and ‘language forms’ (Fauconnier and Turner, 2002: p. 152). Imaginative operations of the mind yield different ‘feelings’ but no different objective structures. Mappings are in no way meaning-dependent. I conclude that they are only symbol-dependent, and that the entire view stays computistic.

as it occurs when dialogue and negotiation in general take place. It allows us correspondingly to hold other mental spaces present in consciousness in addition to the one representing the present, and then to let active arrays of our own or others' out-of-presence mental spaces generate meaning relevant for the present. Blending of 'alien' and 'own' contents — present or non-present — during dialogical interaction may thus be the original source of complex meaning construction, and linguistic semantics in general. Constructions or compositions that include 'your meaning' and 'my meaning' and yield impersonal, blended 'whoever's meaning', meaning *tout court*, may thus be the operations by which our minds 'blend their way to abstract thinking', to discourse-based or symbol-based reflection.

This view no longer emphasizes the mere plurality of {MS} and their mutual mappings and blendings as such, but rather draws attention to the existence of a structurally stable *semiotic syntax of spaces and space types* — creating networks of MS by 'space builders' in Presence or Base space that send or delegate part of our attention, so to speak, and of the attention of our addressee, if there is one, to other regions of reality, to whatever we wish to think of or refer to: a *Reference space* out of presence. These thematic or referential mental sites differ from Base space by being signified from there; the signifying connectors or space builders regularly specify the type of reference intended by this operation of *space delegation*.

Reference is typically distant from the Base in speech-act distance, in *time* (cf. the morphologies of tense) or *place* (cf. the locative adverbials), or both, but can also be neutral to time and space and instead deviate from the Base by deliberately adding extra *modal* features or constraints (as in games, rituals, and conditional thinking), and furthermore it can shelter transmitted, encapsulated, singularized and *symbolized* representations (reported myths and beliefs, fictions and fantasies, signed by or ascribed to singular intentional entities, i.e., given under the seal of a proper name; cf. the (singular) photo of Lisa, above).

Types of delegation from a Base space to a Reference space:

Speech-act distance	"I claim/think/ . . . that X"
Spatio-temporal	"Tomorrow, X"; "In Baghdad, Y"
Modal	"In chess, X"; "If X, Y"
Representational	"In <i>Ulysses</i> , X"; "Bob believes that Y"

There might be still other reference types, or these may be ill named; this discussion is still in its initial phase. The delegations by speech-act distance, time, space, modality, or symbolic representation can apparently take place in all semantic domains. In this sense, all semantic domains have unlimited depths of intelligibility.

Space delegation creates reference 'sites' in thought and language. I claim that when this happens, and a *Reference space* is thus set up, with material from some domain, a parallel space will very often accompany it, namely a 'site' containing a way to imagine or otherwise access the reference, a way in which it is present or presented to the cognizer: a *Presentation space* of contents (from the same or other domains) that our mind tries to map onto the referential content in order to prepare a (blended) *Representation*. The 'presentative' content is in a very general sense *predicated of* the referential content. If a

blend of this predicative and this referential content obtains, then the blend, the Representation, will offer to the cognizing mind an instance of the referent as possessing the properties predicated of it. Fauconnier and Turner predict an ‘emergent meaning’ to sometimes turn up in the blend. It can be shown that this ‘emergent’ miracle is rather the result of a *schematization*. In fact, when a blend is set up, there is, I further claim, a third input from the Base, a semantic component I have suggested to call a *Relevance space*, and which contains contextual semantic prerequisites and dynamic schemas projected onto the blend and stabilizing its meaning. There are therefore two states of the blend, the first being *figurative* and uninterrupted, the second *dynamic* and interpreted by the induced schematic structure from Relevance space.

These five or six spaces form an elementary network, a sort of MS network molecule, which turns out to constitute a minimal composition or meaning construction.²⁵ The normal case is a message-formed utterance manifesting a nested structure, using the elementary network recursively.

Let us consider a simple example, a “material anchor”, namely the use of a thermometer. The user in Base space sets up a reference, namely the current temperature, for example, of his apartment. The user looks upon the graded scale of the artefact, in a Presentation space of the temperature request setting, in order to identify the position of the top of the mercury column. This scale on the ‘thermic probe’ and the idea of temperature’s quantitative potential in the apartment of Reference space are connected by a mapping and form an imaginary blend in which the temperature “is” the number indicated on the probe. If the thermometer is believed by the user to be a good probe, the semantic result is a thermal information imported into Base space.

The corresponding network will be the following (Figs. 1 and 2).

The dynamic schema making the thermometer relevant for obtaining information about current temperature is, *in casu*, that of a *probe*: The subject is barred from accessing an object, but the barrier lets the subject penetrate it with an imaginary tube through which specific information can pass between the subject side and the object side of ‘reality’, and thus allows the subject to obtain knowledge of the object despite the barrier.

This intuitive notion underlies the use of watches, compasses, alarm controls, and measuring instruments of many sorts.²⁶

Networks in meaning construction apparently occur in all forms of communication, not only in language but — according to current research — also in music, gestural semiotics, and pictorial expressions. The connection of these semantic structures to *verbal language* is still to be explored. The basic ‘syntactic’ structure of MS networks, as sketched out here, may be a prefiguration of predicative sentence syntax, and a prerequisite of the transformation of non-propositional, direct, experiential, phenomenological, and non-predicative on-line meaning into propositional off-line meaning. Language seems to pick up and use meaning structures from all levels of cognition but only to structure *utterances*

²⁵ Our minds do not seem to preferably set up, from the Base, just one simple delegation to one Relevance space. To ‘think of something’ is often, maybe always, to think of it *in some way* (through some Presentation).

²⁶ The notion of material anchor has been created and developed by Ed Hutchins (1995). Fauconnier and Turner (2002) comments upon some examples, in chap. 10, but offer no convincing network analysis of the discussed use of a watch, pp. 195–198.

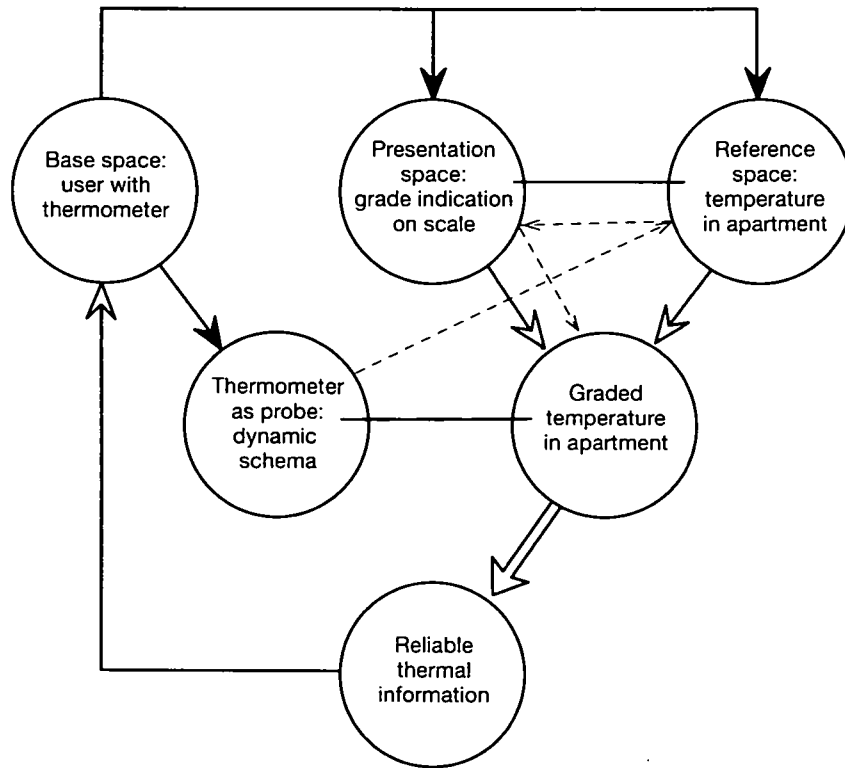


Fig. 1. Thermometer as a material anchor.

on the situational MS level of mental architecture. In poetry, the pre-predicative and the post-predicative dimensions of its grammatical potential are drawn into the foreground, so that its roots in perception-related form and its ultimate horizon in affect are, in a sense, exposed.

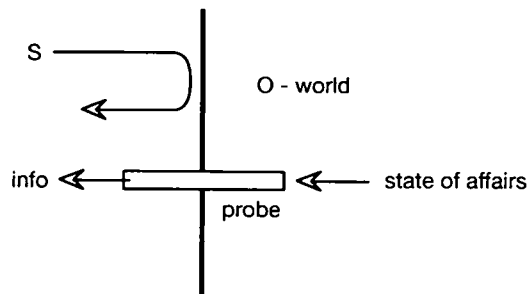


Fig. 2. Probe barrier schema.

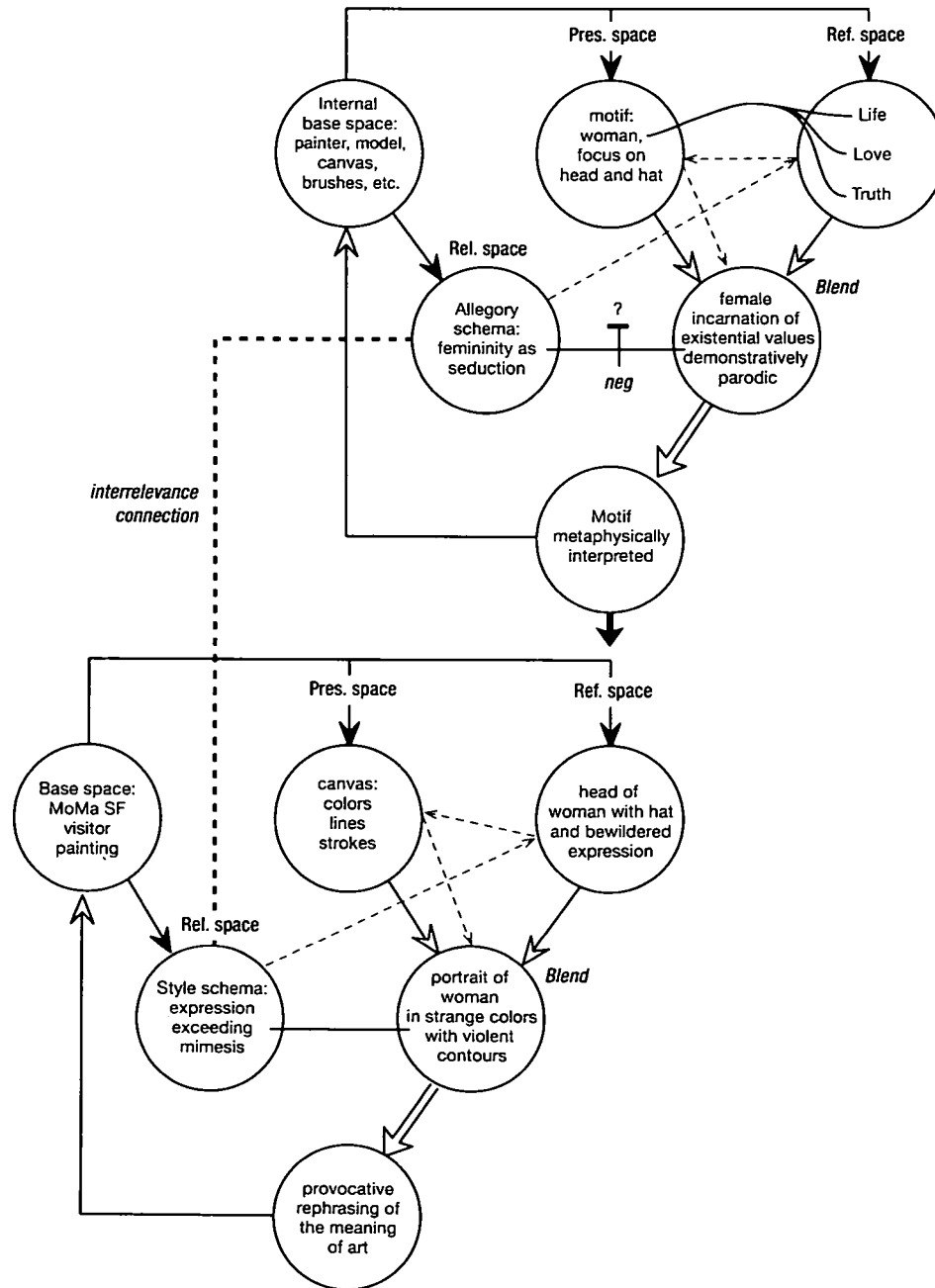


Fig. 3. Nested network.

In painting, an elementary example could be a portrait, say Henri Matisse's *Woman with a hat* (1905), showing a female face²⁷ painted in a historically significant fauvist style. The painting is in the MoMA of San Francisco, and if a visitor finds it there and takes a look at it, he will be in a Base space from where he may be prompted to view the picture as a portrait of the painter's wife; this portrayed person will then be positioned (by space delegation) in the visitor's MS network in a biographical Reference space, whereas the canvas in the museum will be contained in a Presentation space whose structures will map onto some details of the face of a person, in Reference space. The scandal provoked by this painting was due to the blend: are you allowed to represent a woman without respecting the real colors of her lovely face? In the picture, her nose is green (cf. above, on Fauconnier's contradictory informations about a person depicted). This is because some colors are allowed to stay on the 2D canvas and thus to be pure events of the act of painting, and to be expressive gestures independent of the ongoing mimesis. The 3D motif is not the meaning of the painting; this mimetically rendered motif is itself a sign of a higher-order meaning, a (relevantly stabilized) metonymy of a non-figurative idea, e.g., Beauty, or the Force of Love, or What Life Is About. So there is a network embedded in the (Referential) motif. Our aesthetic sensibility will of course notice the vital relation between the style of the representation and the non-figurative higher-order (metaphysical) meaning of the painting. This relation between two relevance contents, Style and Sense — one at the 'signified' level, the other at the 'signifying' level — is the axis of aesthetic meaning of a work of art; and it is cognitively interesting to observe in this double network a semantic composition obtaining both a focus on formal beauty and another on abstract meaning, a complex composition that could well be the semiotic origin of symbolization.

Here is the nested network accounting for space structures like the one this painting offers, and probably for pictorial expressions at large, allowing drastic differences in the invested contents of the articulated spaces (Fig. 3).

The MoMa visitor has to imagine the artist in his atelier (Internal Base space) working up the portrait and vividly experiencing the relation between what he is achieving with his brushes, the stylistic code that supports it, and the existential sense it makes; imagining this process helps the contemporary viewer of the painting 'understand' it properly. We notice that a virtual intersubjective relationship is being structured by this double network: one subject is in the internal Base space, the other in the external Base space. This is also, I think, the relationship that is experienced when we read written texts — the sender is in the internal Base space of an analogous double network.

MS semantics and its basic networks may be an early paleolithic, proto-symbolic and proto-linguistic cognitive creation of the human mind, which is still with us; anyway it certainly remains as active and creative as ever. The particularly rich meaning unfoldings that can be found in our technical and artistic practices, in artefacts and works of art, testify to its transhistorical presence and perhaps also to the importance of tools and art to the development of the blending brain.

In this text, I wished to stress a major methodological problem in current MST, namely its historically inherited vericonditional habits and the negative effects they have on the semantic sensibility of the analytic work — especially if they stay undetected and

²⁷ <http://www.abcgallery.com/M/matisse/matisse80.html>.

unacknowledged — and the confusion they cause on the level of critical debate in cognitive semantics. I further tried to show some recent developments in MST analysis as practiced and theoretically elaborated at the Aarhus research group in cognitive semiotics. The study of mental spaces have attracted many cognitive researchers, and this discipline will probably soon be adopted by editors of handbooks in cognitive semantics as a standard field. This institutionalization will then either add to the stock of confused doctrines or contribute to our knowledge of meaning production in cognition. The outcome will to some extent depend on the quality of critical debate, including the evaluation of current Spinozist motives, such as skepticism and implicit mysticism, in its style of research.

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