

# Might true-sense anchors repair the representational capacity of natural language?

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## **Abstract.**

An effort to answer the question in the title is made first by examining the three-value logic of two natural language phrases, “Oh My God” and “This Makes Sense.” This leads to rejection of truth-value as representationally sufficient when the goal of evaluating utterances is sense-making or categorization.

Next the phrase “This Makes Sense” is analyzed so as to articulate persistent hurdles in efforts ontological or otherwise to ground natural language validation and modification. What is shown is that Frege’s sense, reference, and identity characterized each separately as valid operators are what anchors natural language. With this, the utility defined as true-sense is first visited.

Finally, a spatial configuration of three-value logic is presented and evaluated that does not represent as a truth table. Rather its eight 3-bit binary combinations represent through inverse point symmetry of values, resulting in no exclusion of null (000) or logical negations the way paradox-bound three-value logic truth tables do.

True-sense reveals the complex bivalent function of anchoring and inverse symmetry shows that additional useful constraints and shared sensibilities are possible. Indefinite turn-taking, at odds with true-sense, but seemingly necessary given natural language’s associative and relational properties and need to modify, in the same way organisms adapt to their environment, is dislodged as a necessary condition. While turn-taking necessarily both expands and mires the associative and relational structures of natural language, in light of anchoring through true-sense, representational capacity is demonstrated to be something else.

Resolving ambivalence serves purposes such as sense-making and categorization and is a useful activity for natural language modification. Representational capacity viewed as reference-neutral complex bivalence accounts for true-sense and anchoring such that natural language modification may not be susceptible to game-play vagaries. Defining true-sense anchors in logical terms, it is possible to conceive of natural language repair whereas difficulty in trusting natural language representational capacity currently persists.

**Keywords.** Three-value logic, truth table, vibe, constraint, validation, core knowledge, sense-making, symmetry, paradox, naïve realism

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## 1. Introduction

“How Are the Senses True,” a short three-part series by Jesuit priest Pierre Bouscharen published in 1927, challenged a number of philosophical “vagaries” that vex investigations of semantics even today [1]. His observations and reasoning in applying “how” to the senses, as in the complex perceptual and relational experience of an individual, beg two larger and still open questions. How sense is made in the first place and how it seems both true and not true that the truth of sense itself is a groundless state.

The title of this article is itself a question. The connection to Bouscharen’s inquiry is that, with a decent answer we may lift out of the groundless state and achieve new capacities one can only imagine are there without its non-existence.

The representativeness of semantics notwithstanding, in the modern communication landscape the need for sense in its widest connotation has more than withstood - it has been amplified by - the test of time. Senses meet data, still mysteriously, such that realism, idealism, and perception triumvirate. The logical landscape is endless and complex approaching senses and data. Those reasoning long ago about intuitional logic in maths anticipated much that would be relevant of such an amplification.

To meet the challenge, I provide herein reasoning whereby true-sense anchoring is shown as an undeveloped potential dormant within three-value logic. Since it is complex and novel and I have limited space, my goal will simply be to present the framing and various schema required to grasp it. The wider implications, of which there are many, will focus on the general intent of and potential for representational capacity and repair.

I begin by blending a rudimentary form of truth-value that employs Frege’s relational categories of sense, reference, identity with Peircean three-value logic [2,3]. Generally, Frege’s postulated truth-value explicates certainty of sense and reference within natural language utterances, and three-value logic employs truth tables.

I develop a blended schema that accounts for generation of sensible meanings then another that is an altogether different way of combining the same truth three-value binary combinations to achieve a complex, anchored dually bivalent schema. It provides a wide range of logical formulations, including language representations, commiserate with nature defined broadly such as Miguel Espinoza provides for in *A Theory of Intelligibility* [4].

Rather than the meanings of utterances, valid in a given context or not, valuable in a given context or not, as the basis for the recontextualization that is a hallmark of representational phenomena in general and linguistic phenomena in particular, I posit that utterances are grounded in true-sense to the degree they have representational capacity that is free from bivalent logic traps and mirrors an experience of “I” in context constrained only by perceptual realities. So as to be useful in performing the function of anchoring, the formulation of true-sense distinguishes such a definition of anchoring from idealistic internalism. Though Espinoza does not use the phrase true-sense nor present a specific schema for repair, for instance, applying the ultimate natural category to natural language, he does deftly challenge Putnum’s internalism and suggest reliance on natural language functional capacity in hopes of supplanting it when he observes:

*We cannot treat understanding a sentence as knowing its truth conditions... The idealism inscribed here is evident when there is ontological disagreement among our best descriptions: the internalist has only a conventional way of making a decision since for him there is no fact of the matter [4].*

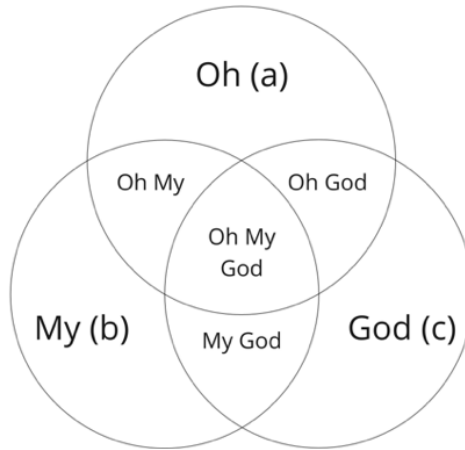
It is through true-sense that natural language utterances are anchored, that is, realistically grounded in representational capacities *beyond the utterer*. As well, whenever truth conditions are idealized, novelty and innovation (convention-bucking) are implied and at times quite useful to less common (or even rationally perceptible) purposes of and capacities for understanding. Computationally, the connotation of an effective capacity of natural language that is enhanced by true-sense suggests that much capacity lies untapped, waiting for us to enhance personal and relational agency through natural language true-sense anchors.

In relation to representation, I approach the meaning of true-sense in terms of resolving ambiguities, or failing to, resulting in loss of true-sense, which is different than a null logic state. The use of true-sense so as to meaningfully disambiguate vaguely or densely contextualized expressions, determines the necessity of certain types of natural language expressions I refer to generally as anchors.

## 2. Arriving at Sense as Constraint

### 2.1. *Oh My God*

Take the English natural language expression “Oh My God” as a primitive semantic representation. The purpose in analyzing it is not to construct a semantic analysis about its various meanings. Instead, it is to examine, define and understand the semantic utility of what will be referred to later as an *anchor*. The first step is to lay out the primitives of an ungrounded, or unanchored, state as a Venn-style layout, so as to construct a three-value logic truth table with overlapping circles. Another way to appreciate it sense- and data-wise is as three-tiered, three-word combinatoric.



**Figure 1.** “Oh My God” as unanchored exemplar.

In using Oh (a) My (b) God (c) to represent through unanchored natural language, first apply Frege’s definitions such that (a) is sense, (b) is identity, and (c) is reference. A first tier of meanings comes from (a), (b), and (c) corresponding to the utterances “Oh”, “My”, and “God”. It is possible to further the analysis by taking the utterances also representationally to correspond to sense (“Oh”), identity (“My”), and reference (“God”). These are the cases where one of the three logical operators is true.

A second tier of meanings is derived by combining “Oh My”, “My God”, and “Oh God”. As shown in Figure 1, these constitute the areas where only (a) and (b) overlap, only (b) and

(c) overlap, and only (a) and (c) overlap. In each of these, two of the three logical operators are true. The third meaning tier corresponds to “Oh My God” such that all three are true.

While the first tier simply represents semantic meanings, I propose that, given Frege’s sense-reference inferences, the second tier ( $a + b$ ,  $b + c$ , and  $a + c$ ) construes meaning additionally through what he deemed truth-value. Finally, the expression “Oh My God” construes through a combinatoric among sense, identity, and reference to arrive at truth-value. To construe meaning is to represent.

To the extent that, representationally, tiered meanings with various truth-value combinations promote modifications for the purpose of novel and otherwise (such as counterfactual) meaning-making, such meanings, even at tier two, are not grounded. The possibility of an utterer adequately representing meanings breaks down, replaced by derivations.

$a + b$  grants reference modification, therefore  $a + b + c'$   
 $b + c$  grants sense modification, therefore  $a' + b + c$   
 $a + c$  grants identity modification, therefore  $a + b' + c$

Any combined derivative truth-value of  $a' + b' + c'$  is not true, though it contains parts recognizable as having meanings containing both semantics and truth-values. Further, it is from  $a' + b' + c'$  that the semantic dynamic by which Bouscharen’s question “how are the senses true” gives the perception that sense data, including natural language use, is ungrounded.

The next step then, in explicating the proposed anchor, is to similarly analyze the three-word exemplar “This Makes Sense.” At tier two are “This Makes” (or “Makes This”), “Makes Sense” (or “Sense Makes”), and “This Sense” (or “Sense This”). At tier three, using sense-reference definitions and modifications, the amplification of modifications yields a sentence “This Makes Sense” with no grounding. It’s a logically false statement reminiscent of Russell’s Paradox.

Sense-identity-reference combinations when observed as functioning within natural language modification schema are lost to context dependence. Intent by an utterer to accurately represent is meaningless. I term this state of affairs semantic despair. On the other hand, what is effectively represented by such a modification process is that, collectively, sense-making, for better and worse, is intimately tied to the effortless and often fruitful capacity to meaning-make.

And so we shriek to each other betraying the insufferable optimism that is the groundless fall of our semantic suffering. In other more direct through less evocative words, natural language modification focused on maximizing truth-value leads to representational damage. The utility of objects, including human agents, is as idealizations. With this comes damage that can only be repaired through a representational process that is also realistic in the sense of based in reality, realness.

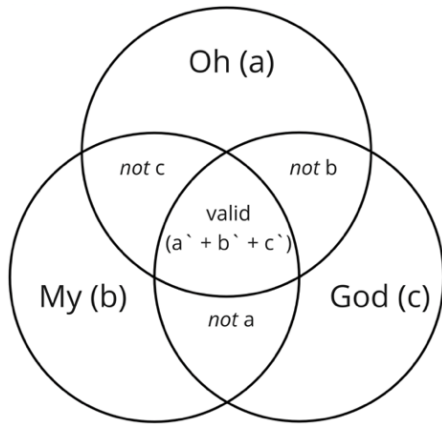
Groundless modification, in damaging representational capacity, is how humans have become frustratingly susceptible to deceptions. Agency is not satisfied with groundless language and seeks to ground it where it wants. In this, natural language is used to distort what is possible, representationally.

## 2.2. *This Makes Sense*

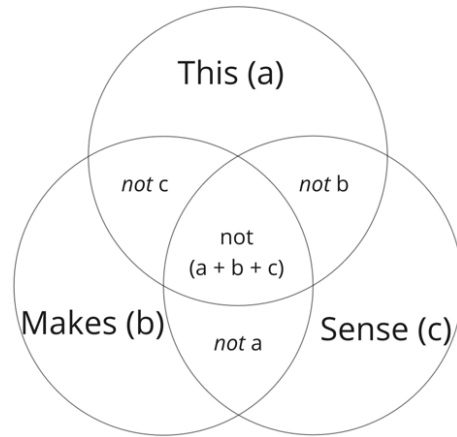
To stop at the moderately satisfying conclusion that “utterers are sense- and meaning-making beings” is to leave open the issue of lack of grounding, which vexes vast philosophical territory

beyond semantics even. Concluding that an utterer's intent when it comes to meaning is itself meaningless is hugely problematic. This and more can be explored by analyzing the paradox-inducing "This Makes Sense" with the same meaning-making schema as "Oh My God".

Disambiguation provides clear benefit, for example through sense-making and effective categorization. To ground meaning to context can be as simple as requiring validation. Disambiguation provides validation. Yet the exemplar "Oh My God" can be disambiguated, while the exemplar "This Makes Sense" cannot.



**Figure 2.** Disambiguation of "Oh My God".



**Figure 3.** Disambiguation of "This Makes Sense".

To demonstrate validation as a route to disambiguation within meaning-making, Figure 2 "Oh My God" yields a valid area of overlap as  $a + b + c$ , when (a), (b), and (c) are first defined by what each is *not*. Valid  $(a + b + c)$  constitutes a grounded representation that qualifies as sense-making of "Oh My God" by eliminating ambiguity in a given use of (a), (b), and (c) when considered as a tiered combinatoric. In the sense-making context of disambiguation done with care, "Oh My God" can "make sense." Derived meanings can be similarly validated in sense, identity, and reference through disambiguation.

The "This Makes Sense" method in Figure 3 differs from that of Figure 2 in that the tier three meaning at the center is representationally invalid. Not coincidentally, what is both semantically different and of consequence between Figs. 2 and 3 is "My" versus "Makes". The latter has the virtue of identity (b) specifying an active rather than passive role for itself. From then one can conclude that sense-making through disambiguation is more than a claim about a specific statement "making sense." It internally validates sense, identity, and reference, presumably vis a vie the heretofore undefined context of the utter.

### 2.3. This Makes [More] Sense

The trouble now, insofar as reality remains the shared, validation-sourcing part of the reality, idealism, perception triumvirate, comes in distinguishing groundless disambiguation from counterfactual formation. Assigning special terms, with which to further reason about valid occurrences, is useful. The specialness of the terms assigned is that they indicate a given valid component's objective reality. Validity, in this context, indicates unambiguously true.

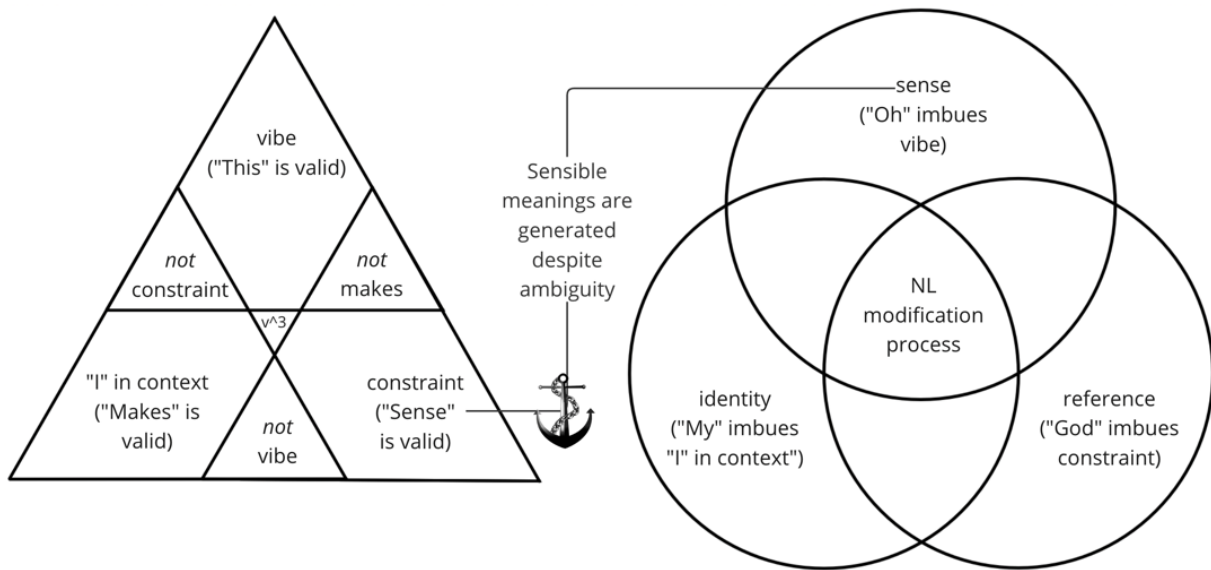
- Valid sense (a) = *vibe*
- Valid identity (b) = "I" in context

- Valid reference (c) = *constraint*

Given the valid (unambiguously true) “This” objectively represents vibe, then valid “Makes” is not null and instead represents (active) “I” in context. Further, valid “Sense” is not null and represents constraint.

Inferring no such validation is possible through counterfactual formation, these designations have the added feature that there is no counterfactual vibe, counterfactual “I” in context, or counterfactual constraint. In such a grounded state, it can be observed that the semantic activity of natural language (NL) modification is foundationally dependent on validity rather than strictly on context, which is often an unhelpfully vague condition. Not exactly solid like the ground we walk on, but akin to it. An anchor resting on the ground at the bottom of the water we are buoyed in.

Anchoring is comprised then not of one but three validations. Metaphorically, an anchor (vibe), rope for joining (“I” in context), and buoy (constraint). To aptly represent three-value logic differently for the purpose of arriving at true-sense, I will employ equilateral triangles to represent validated sets of values where circles represent the continuous value sets of sense, reference, and identity. On the left in Figure 4 is the above validation schema connected to the NL modification process shown right.



**Figure 4.** Amplification of sensible meanings as a function of anchored validity. Modifiable contextualization, the basis of representation, such as in “This Makes Sense” (left) connects through sense-as-constraint to representations and modifications such as for “Oh My God” (right).

Viewed from right to left (from modification to meta-validity), the connecting line in Fig. 4 represents sensible meaning-making. Viewed from left to right (from meta-validity to modification), the connection represents sense-making.

Analyzing expressions through anchoring this way, meanings appear not to take up tiers but rather ripples. Beyond a certain point, the “wave” disappears, blended back into the surface of the water. Ambiguity has overtaken the expression.

### 3. Compatibility of anchoring with both modification and true-sense

#### 3.1. Three-value binary logic is fragile

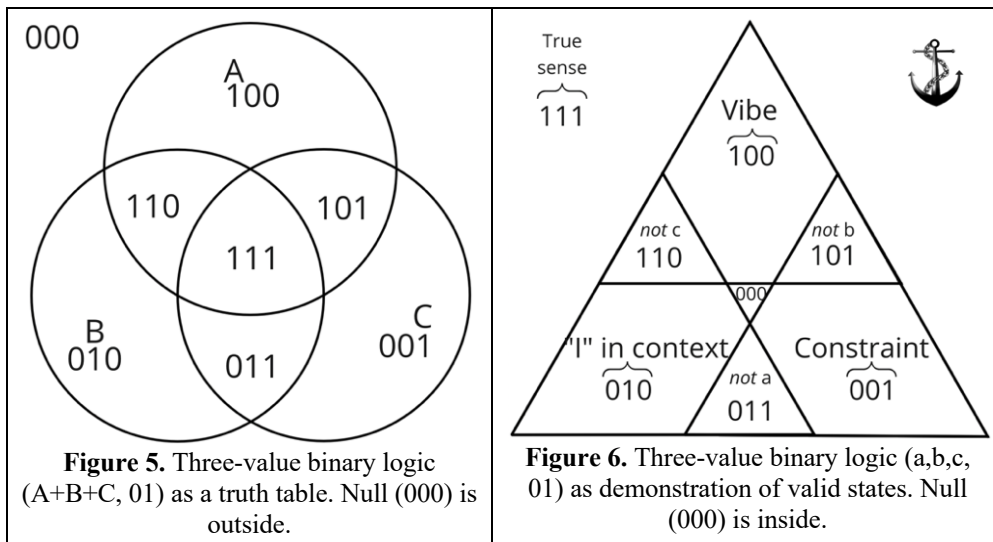
To begin to approach true-sense, consider any object is always itself. With this, and agency, or modifiable identity too, is a hint of true-sense, which is both dynamic and specific. Specifications regarding identity that amount to idealized agency however will not be adequate. On the question of whether true-sense (as object-ness) can be a matter of *a priori* categories, noted by Espinoza to be a “pseudo-solution, verbal and sterile” [4], must be put off to the conclusion. Most often the answer to dealing with senses of things is to construct truth-value tiers, with three-value logic being its starting place.

In three-value logic, its truth table represented in Fig 5 again as three overlapping circles, we see that three-value logic, 000 is absence of truth-value. The circle corresponding to 100 is A true, 010 is B true, and 001 is C true. The agent is always taking a turn at truth, and thereby not themselves true or not. Rather they have the job of taking up a position on the truth table. This is how I am defining identity as (idealized) ambiguous agency. There is no truth test, but rather only the expectation that no meaningful agential context is the context.

As such, all “plays” linguistically exercise truth-value, defined as agent engaging in “idealizational” games, generating semantic patterns to newly configure, to ‘play along’, by *neutralizing its own ambiguity*. Circles represent ambiguity as the defining dynamic for each state A, B, and C.

The representation in Figure 6, constructed of overlapping isometric equilateral triangles unlike the isometric circles of Fig. 5, has a different advantage: a capacity for sameness in all logic values for everyone and everything. With the same three-value binary logic, ambiguous identity and truth-value are resolved. What is represented instead is three-value logic (3-bit binary) as a mirrored set of three-value triangles.

For vibe, “I” in context, and constraint, in Fig. 6, ambiguity has been neutralized through validation. As such, each three-value instance has three values in dynamic relation, represented by an equilateral triangle. A subset tringle within each specifies the inclusion of each of the other two true values. The value 000 can be understood as a novel source; 111 as novelty-free representation limit, or true-sense.



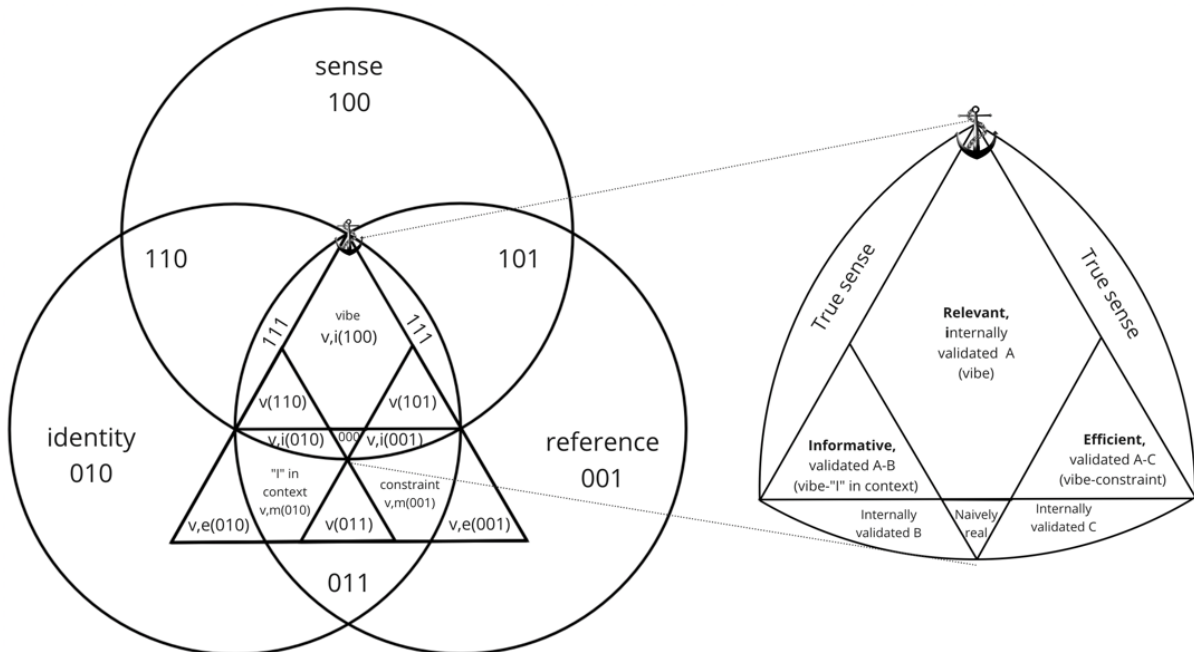
As covered in the previous section, constraining to truth table values results in representational damage. The reason is that the logic can be “gamed.” Through A-B-C ambiguity position-jumping possible in a truth attainment-focused truth table as in Fig. 5, each utterer is playing the “attain truth” game. With null state (000) on the outside, representation is indistinguishable from manipulating truth-value toward pattern advantage (111). For linguistic expression in terms of game-play, 000 represents the start of a new game. In terms of sense-making, 111 represents inclusion of all valid associations.

Truth-value is not an attainment necessary for valid representations though, as demonstrated by Fig. 6. True-sense anchoring is. With a system that has the potential to understand through valid states, representational capacity is protected from A-B-C damaging position-jumping that makes it the case that truth can be gamed.

### 3.2. The vibe-constraint of objects as in ourselves

Natural language has consequences, especially profound due to the shared, generative processes of validation and natural language modification. Those like us with natural language agency do not exist in isolation. We interact about and through objects, including events and places. An object can be referred to by name and location and given other context via communiques. In the same way natural language can be analyzed for truth-value due to sense and referent being resolved, objects including agents can claim true-sense when communication about vibes and constraints sufficiently validates senses and referents.

Vibes and constraints as representational phenomena true for “I” in context. Natural language modification addresses if not resolves the ongoing process of many “I”s with varying vibes and constraints coming to generate together using objects but also concepts (idealization objects). Real and imagined objects are subject to distortions, deception and misattribution. This is the negative side of natural language modification.



**Figure 7.** The two 3-value logic types combined (left) with natural language modification inset (right). Letters refer to valid (v), internal (i), external (e), mirrored (m).



Figure 7 combines Figs. 5 and 6. It shows the relative constrainedness of the validated logic set within the modifiable sense-identity-reference logic set. Anchoring as a logical function is shown in the expanded inset (right). Correspondence between true-sense and meta-valid (111) logic is made explicit and seen to be tempered by logical functions further specified as relevant, informative, and efficient.

In overlaying the logics, additional categories arise – internal, external, and mirrored. Validation requires external validation and mirroring (when sense is not known). True-sense further requires internal validation, parity between B and C and the realism as a naïve criterion, perceptual rather than conceptual.

Objects here become central to expanding the logic of anchoring. To facilitate expression and exchange, natural language becomes object-oriented in a communication shift that happens around 12 months of age in humans. Spelke, in her 2022 book *What Babies Know*, posits that core knowledge precedes it, tempered at the 12-month old's transition to prioritization of social exchange-based resonance about objects [5]. Thus begins the individual's search for truth.

Learning about the world underlies search for truth. Individually and early, searching our undifferentiated perceptual landscape for signs of mutual understanding leads to the explosion of natural language acquisition. Collectively, from a linguistic point of view, as Champagne's exposition on Peirce's paradoxical reliance on bivalence reveals, convergence to truth has no end [3]. Which makes it less a convergence to something than a convergence away from.

In that is the potential for an unmooring, where perceptiveness lapses away from true-sense anchoring and toward gaming of language (Fig. 5) and pure concept validation (Fig. 6). Damage though is wrought from the tiering of the two, where useful oscillation between anchoring and modification (Fig. 4) is quite adequate. In the realization of believing true-sense (being confident in our agency and identity) yet also refusing it in others who do not validate us in expected ways, we become equally excelled at truly meaningful communication as we are at fabulous confabulation disguised as meaningful communication. Somewhere in between is modern sense-data driven culture today. Mired by, in a phrase, representational disrepair.

In the loss of true-sense anchoring and concomitant with the ready pursuit of advantage through the gaming of concepts, humanity has had the guardrails removed between truth-seeking and exploitation of our necessary and early reliance on object fascination for participatory power. This is perhaps what certain ancient temples real and fictional represented, the ones erected metaphorically on the ambitious goal of foundations for both heaven and earth. The ancient Sumerian version was the Etemenanki. In the Hebrew bible, the story of a Tower of Babel is told. Literally, a tower of confusion.

At a personal level, a good measure of representational disrepair is the perception of hearing ourselves talk, and having another human look us in the eye while we do, and them encourage the exchange by nodding and babbling back, mirroring what they see and hear from us. This is what we do when the self-motivated goal of truth-seeking seems too remote or the object-relationship in need of repair due to lack of true-sense anchored trust in what is being represented.

I would argue that bridging of heaven and earth is not as ridiculous as such stories make it seem. The role of mirroring, not as trivial and meaningless as it may seem. Repair, return to true-sense anchoring as an alternative to conceptual gaming, holds promise for renewal of sense-making and the object and category reliance that has supported humans in achieving so much.

Natural language anchors as posited here are both already present and functioning to stop our "getting away" with confabulation. To get to recognizing representational damage and enacting repair, consider that, not saying ridiculous and stupid things is easier than not doing them. Not doing them (self-control) is easier than controlling others. All of this is easier than

perceiving from our naively real position what it means that language affects reality through representational capacity. To this difficult end, technology will no doubt be an enormous aid.

#### 4. The perceptual freedom and expanded logic of reference-neutral bivalence

##### 4.1. *Perception, the predecessor of apt attribution*

As adults with recursive and multiplicative knowledge firmly embedded in our experiences of reality, the question of representation is easily lost to the gaming of concepts. We might even come to “not believe our eyes,” allowing suspicion or despair to override the perceptual richness of direct experience. As preverbal babies we learned representation, and language within it, by a process Spelke evaluates based on a wide array of both empirical and analytic research of attentional studies of human babies one year of age and younger [5].

One question Spelke asks is, how is it that humans get the gist of language, before even achieving our first intentional utterances [5]? Importantly for this paper, representational capacity is one way to describe the method she documents as foundational to knowledge development. To that end, she posits six domains as “core knowledge” available to all communicative, locomotive beings. The implications to adult humans can be extended to representational capacity within knowledge and language acquisition, evaluation, and modification. Spelke analyzes the relationship further, connecting the six-domain core knowledge to human’s “talent for language” [5].

With true-sense anchoring, the domains of core knowledge connect to representational capacity as the source awareness of *inner world meeting outer world in a way that comes alive with meaning through knowledge-imparting relational functions*. This is useful in the next section, where relating three-value logic to sense, reference, and identity, as well as vibe, constraint, and “I” in context is possible through symmetries rather than tabular truth-telling. In grasping the priming of sensory experience during preverbal development, it is not hard to conclude that symmetry (including mirroring) in relationships of all kinds can be logically related to sociality, a sort of proto-sociality. I am inclined further to deem true-sense anchoring as a return to natural language innocence and the newly unfolding social richness that accompanies it.

##### 4.2. *Point symmetry and the complex logical leap to bivalent freedom*

Truth table three-value logic, extendable in terms of set size of bivalent values, is ambiguous enough to accommodate much in terms of natural language semantic understanding. It is not however representational enough. Notably, what is not at all clear is how to use truth tables to validate truth-value, categorization, or sense-making, which matter inasmuch as utterers and their interpreters wish to be extracted from vulnerability to deception, distortion, misattribution, and other foul play, intentional or not.

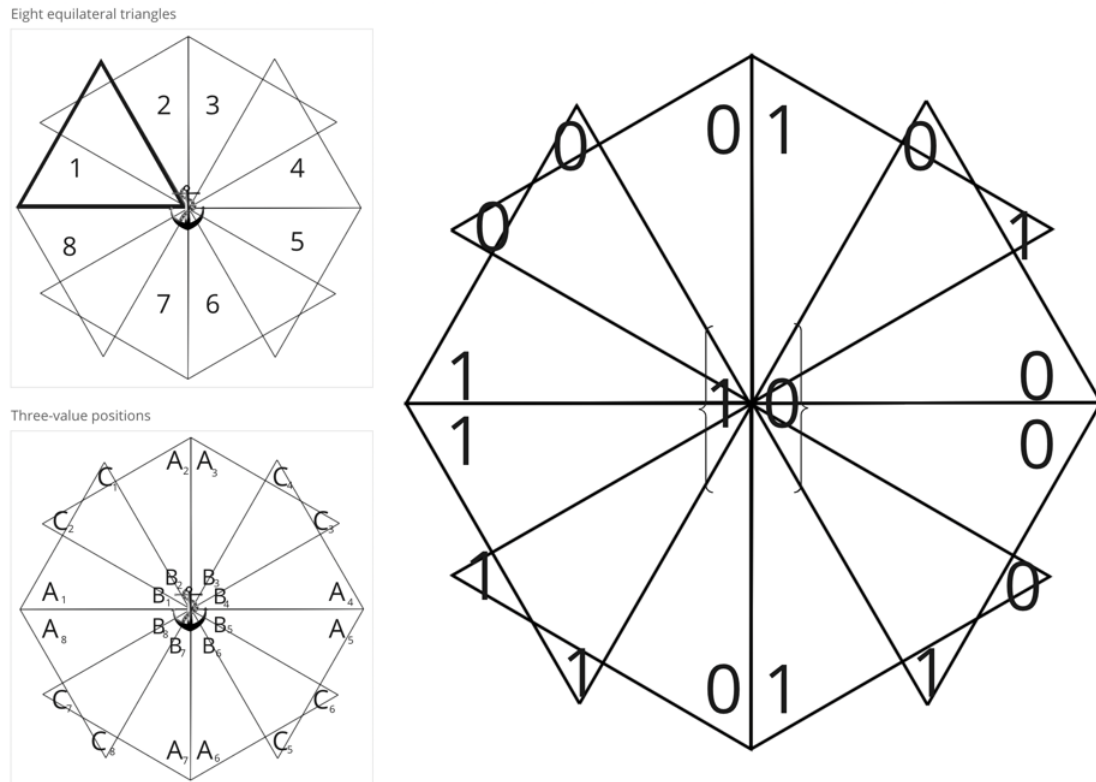
Mirroring the bivalence of the ubiquitous logical operators 0 and 1, classical logic offers opportunities through bivalence to combat monkey business. Ethics deems right from wrong. Epistemics, valid from not. Computation, true from not. Champagne, in his “pragmatic-semiotic defence of bivalence,” elevates the complex role of bivalence, stating “when we make higher-order claims about [the notations we invent and manipulate], we inevitably get saddled with bivalent commitments. Such inevitability gives bivalence a special status,” especially important given the bivalence-excluding views proponents of three-value logic tend to adopt [3].

In a truth table, the logic values are tabular or demonstrated through overlap of forms as in Figs. 5 and 6. Either 000 (all null) or 111 (all valid) represent the overarching referent context for the logic set. Figure 8 provides a novel configuration for three-value logic (3-bit binary) based in symmetries, and finally 000 and 111 can face-off.

The structure in Figure 8 is three-value logic constructed around a single point, which is also consistent with true-sense anchor defined in previous sections. It is referred to hereforward as the “memory crystal” (MC), a name fitting to its role in representational capacity, including memorableness. The vertex values of the equilateral triangles configure such that specific binary values are always point symmetric (class 2 rotational symmetry) *in inverse*. Rotational symmetry is in the general category of mirror or reflective phenomena.

Eight equilateral triangles A-B-C radiate such that their rotational symmetry order 8 is point symmetric around value B. Instead of 0 indicating false (not valid) it indicates *valid when omitted*. So, C=0 indicates reference-neutral, B=0 indicates identity-neutral, and A=0 indicates sense-neutral logic conditions. The two smaller MC representations (Fig. 8, left) are keys showing the positioning of the eight equilateral triangles, eight 3-value binary A-B-C combinations that make up the logic representation, and true-sense anchor at the center.

Inverse and other complementary symmetrical phenomena are present in cellular and biochemical structures from simple (lock and key molecules) to complex (mirror neurons), suggesting an array of representational phenomena familiar from being part of networks of living things. Mirroring both imitative and responsive is inherent in social interactions and a factor in Spelke’s core knowledge construction [5].



**Figure 8.** Alternate schema (right) for three-value logic representation and key figures (left) for interpreting the symmetry, complex because of overlapping. Central vertex represents true-sense anchor, occupied bivalently by eight combinatoric values of B. Arbitrary starting place and direction for 1-8 numbering of three-value triangles.

Revisiting Figs. 5 and 6, taken together they expose contrasting, potentially groundless three-value logic schemas, different due to the orientation of each to null state (000). In Fig. 7, null state emerges as corresponding to validation of true-sense, representing the ground of what is real in terms of constrained “T” in context, the source of naïve realism. True-sense anchoring being central to the logic possible with MC alleviates the problem of artificiality in representations when capacity and context are outside of our control.

Observe that in Fig. 8 MC, 000 and 111 are point symmetrical. One way to characterize the logical significance of this the relationship to context and even reality itself is that novelty (000) and pattern (111) generation are inverse mirrors through real context. Another layer that point symmetry adds to the logic and representational capacity of the MC comes of assigning the values 000 and 111, respectively, to naïve realism and reality modeling.

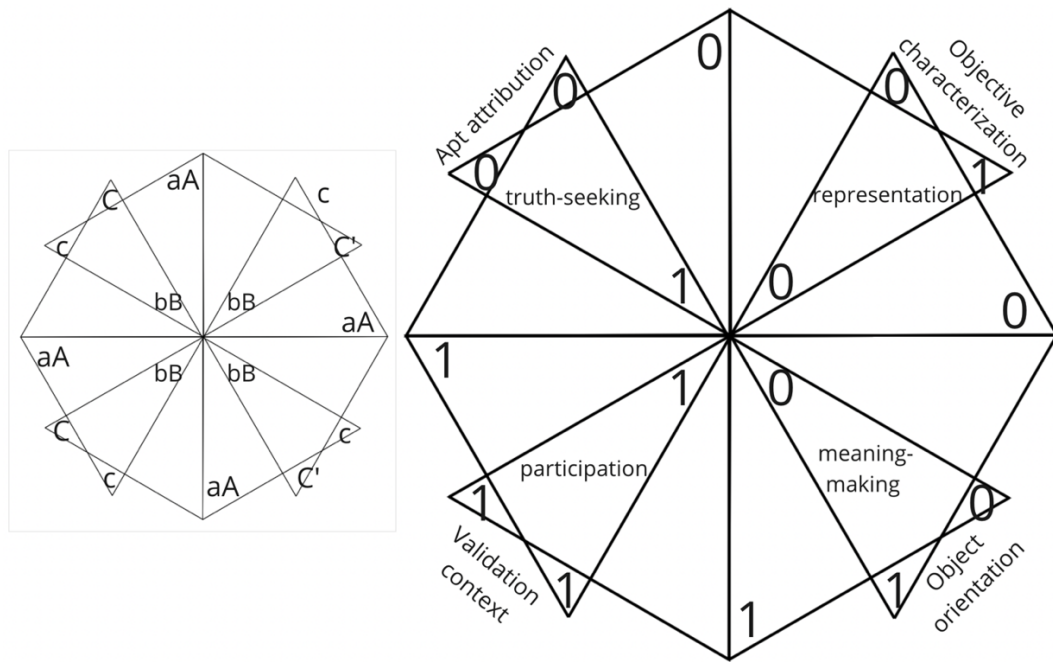
The first conclusion to reach is that, instead of “playing” at language, taking turns A-B-C, and perhaps encountering negations, in MC not only is every value set represented independently (an equilateral triangle), it has an inverse mirror set (dependency). Finally, each value set is in part overlapped by another. With regard to the binary values and the MC as a whole, the overlapping sections have a non-inverse and inverse pattern to the mirror symmetry, only when “folded” along the horizontal axis.

#### 4.3. *How the senses are true*

True-sense, in light of the resolution necessary within three-value logic, can be grasped as, *that which is learned from an object itself, or an objective entity able to realistically resolve ambiguity*. In contrast, the gaming of language is useful because it allows a given utterer (intent on playing) access to counterfactual senses and references necessary for modification towards a particular advantage. And while endless parades of language modification lend adaptability of categories and sense-making capacity, siloing and specialization create hurdles when generalizable, grounded representational capacity is what is needed.

The challenge for repair is to navigate around the triadically reference-trapped logic reinforced by disrepair having taken root. One key is to understand the connection between the NL modification process central to the figure on the right in Fig. 4 and MC symmetries and mirroring.

MC provides the logic structures informing representational capacity and present beyond truth tables, even given three-value binary logic. While capacity can be disrupted by language gaming, it is also available within repair scenarios. In this light for instance, limiting admission of counterfactual languaging (hearing all sides) need not be naïve or neglectful when anchoring capacity is operative. When the representational capacity of natural language is in good repair, all sides do participate (mirror effect), even without actively representing themselves.



**Figure 9.** How the senses are true (aA): when logic is reference-neutral (cC) or reference-adaptive (cC'). Shown (right) is MC where logic values and natural language features are those that coincide with overlap regions. The specifications (left) are those for attaining complex bivalent logic, noted as aA and bB. All eight 0 or 1 values for c, C, or C' are included and show reference-constraint modification in relation to logic value overlap created by adjacent triangle overlap.

In short, anchoring is how logical overlaps arise and sense, reference, and validation confusions are overcome. This explains how in real situations recontextualization such as sense-making or recategorizing, while at times disorienting, is equally a logical process. When anchored and validated, natural language is a process of repair through truth-seeking and participation to yield apt attributions and validation context.

**Table 1.** Reference-neutral or, when valid, constraint-neutral three-value logic breakdown of A-B bivalence in Fig. 9. Listed as well are features that function to contextualize in valid ways the referents that arise.

Reference-neutral bivalence	bB=1, "I" in context anchors valid identity given references (constraints when valid)	bB=0, null identity seeks to anchor "I" in context given references (constraints when valid)
aA=1, vibe anchors valid sense given references (constraints when valid)	cC=11 Validation context cbBC (111) (truth-seeking)	cC'=01 Object orientation cbBC'(100→101; sense→sense-reference) (meaning-making)
aA=0, null sense seeks to anchor vibe given references (constraints when valid)	cC=00 Apt attribution cbBC (010) (participation)	cC'=01 Objective characterization cbBC'(000→001; null→reference) (representation)

As the MC analysis in Fig. 9 demonstrates, logical overlaps relate to important natural language functional processes. Table 1 lays out the correspondences and functions necessary for valid contextualizations. It amounts to an A-B bivalence matrix where areas of overlap in MC logically reveal the following. Reference-less (or invalid reference) yet anchored sense and identity gives rise to truth-seeking through use of validation context. Unanchored sense and anchored identity lead to participation through use of apt attributions. Anchored sense and unanchored identity lead to meaning-making through object orientation. Reference-neutral, unanchored sense and identity expressions give rise to representation through objective characterization. Resolving each is, respectively, the job of truth-seeking, participation, meaning-making and representation.

Validation of language use is not the logical need. Language is already anchored in true-sense. Specifically, disrepair within natural language is a response to reference-neutral bivalence. Representations, in particular the possibility of better ones, get obscured whenever objective characterizations are brought into groundlessness by context itself. This is the case, for instance, with both game-like and concept-driven impositions to identity (expectations) and external validation of “I” in context (a logical impossibility).

To return to Boucharen, the senses are true in that they are phenomena that can be represented in valid ways, free of doubt in groundedness, in pursuit perhaps of truth-seeking, meaning-making, participation beyond navigating ambivalence.

## 5. Conclusion

I have presented the case that natural language is anchored, whereby true (11) and false (00) become truth-seeking and participation and ambivalence (01) becomes expandable. References and, when valid, constraints (CC') resolve ambivalent senses giving the capacity for meaning-making and representation. Shifts in reference and constraint provide valid anchoring necessary for recontextualizations. What has been explicated then is the fundamental logic of how context is a property of identity (when valid, “I” in context) as both utterers and objects, and simultaneously a property of apt participatory attribution.

In his defense of bivalence as central even to three-value logic, Champagne implores his readers: “patterns that are inescapable have a good claim of being foundations, if anything does” [3]. Here, with the MC schema we have the inescapable being mastered. With true-sense based on the anchoring of natural language, bivalence itself yields three-value logic that is in effect inescapably free – when adequately constrained. A paradox, but a realistic one. The three-value logic set that meaningfully incorporates both the all-null argument (000) and all-valid argument (111) wrestles the alligator of logical inconsistency that gives rise to problematic paradoxes like Russell’s.

True-sense anchoring implies as well that natural language is not a social construct so much as a divining rod between participant and others sharing the expandable ambivalence of senses and references when temporarily unanchored. This interpretation is supported logically by Spelke’s theory of core knowledge derived in part from attention studies in pre-verbal human infants. The innocence with which anchored language acquisition is begun is also its saving grace. *This*, that anchored language acquisition logically remains not only innocent but repairable, *makes sense*.

So what is a true-sense anchor? I have offered a solution to Boucharen’s inquiry as to how the senses are true. To move beyond reliance on perceptual complexity and now logical theory

is to return to innocence and create repair. This begs that true-sense anchors be realized. When aA, bB, cC, and cC' are real, repair arises naturally like insights befalling an infant.

So what are they? Spelke's core knowledge specifies six domains: places, objects, number, forms, agents, and social beings [5]. Since it is possible to contextualize and recontextualize places as validated yet ambivalent objects (01), numbers as validated yet ambivalent forms (11), and agency as validated yet ambivalent social beingness (00), it is also possible to intercalate critical aspects of both realness and logical correspondence with the natural language functional analyses given herein.

One related way then to characterize natural language aligns with semiotics in that it is a representational activity of contextualize and recontextualize positions (places) to validate objects using signs. This is a necessarily tautological view of the activity, however, that does not have access to repair through anchoring.

A valid question though is, is there a difference between variations on a theme and "no one true-sense"? If one requires the other, and the premise of this paper is true, how are diversity of views accommodated? One conclusion could be that, views causing distress are a sign that too much anchoring is present. This brings up the important question of, What are we talking about with anchoring? If it is just having categories or ontologies that are useful, we are back at the beginning having gotten nowhere.

When anchoring is not sought or representations have been limited to the point of disrepair, the result is an experience of being continually unanchored. Georgia Warnke examines "The one true-sense", taking Francis Lieber to task [6]. In the process she adequately challenges constructionism, an important step towards real repair. She cites the role of constrained references as "horizons" from which humans are representationally limited by histories, traditions, and the finitude of available constructions. In the end she cites multiple true-senses and suggests such an approach requires compromise [6]. This however fails to recognize that true-sense that is dynamic over time can be pursued without compromise as a centerpiece of sense-making. Rather the approach is one of continuous anchoring. One true-sense, as in anchored realism, is both true and multitudinous when related to *over time*.

This perspective on true-sense is important in appreciating the challenges when it comes to defining true-sense anchors using natural language itself. Champagne begins his insight with an allegory.

*When a stubborn interlocutor in a Tortoise-and-Achilles-style dialogue finally gets it, her insight is retroactively applied, since the pattern was present all along.... Schooling [repair] can nevertheless make the obvious seem remote. Since there will always be holdouts, must an account of a principle... convince everyone in order to be tenable? [3]*

As such, it seems unlikely it will be sufficient to detail true-sense anchors in terms of idealized natural language expression, universal grammar, or even ultimate natural category. Anchoring suggests that the associative capacity within language, while often bemoaned as its downfall, can be harnessed for repair inasmuch as associations are meaningfully tracked by individuals. This is where computation may help humans repair. Technology and scientists are collaborating and successfully decoding non-human social vocalizations [7], a process and outcome that may provide hints at the future of true-sense anchoring. By applying logic in new ways so as to repair representational capacity of natural language and build in sensitivity to, memory of, and associations with true-sense anchors, natural language and the human condition stand to be both repaired and enriched.

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