

Place Before Object

Toward a Formal Epistemology of Place: San Spatial Cognition, Embodied Meaning, and Homotopy Type Theory

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Abstract

This working paper formulates a testable hypothesis: that place, rather than object, is the primitive unit of human meaning-construction, and that this primitive has been progressively occluded over the course of Western intellectual history. The hypothesis is triangulated from three independent traditions that do not cite one another and were not developed in dialogue: (1) the spatial and kinship epistemology recoverable from |Xam San testimony in the Bleek–Lloyd archive, in which "my place" / "our place" functions as an anchor from which kinship, narrative, and knowledge unfold; (2) George Lakoff and Mark Johnson's theory of embodied cognition, in which abstract reasoning is grounded in spatial image-schemas such as source-path-goal and containment; and (3) Homotopy Type Theory (HoTT), in which a type is treated as a space, an element as a point, and identity as a path between points. The paper does not claim these three systems are the same theory. It claims they share a structural pattern — place, path, and the coherence that a path secures — and proposes this pattern as a research programme rather than a settled result. In keeping with an ecological-rationality standard of evaluation (Gigerenzer; Taleb), the paper treats convergence across independently-evolved systems, and demonstrated robustness under real-world variation, as the relevant evidentiary criterion, rather than falsifiability in the classical Popperian sense. The paper closes with a historically-framed research question: at what point, and by what mechanism, did formal Western knowledge systems substitute the object for the place as their basic unit — and can that transition be located precisely enough to be studied rather than merely asserted.

1. Introduction

The default assumption of most Western formal systems, from Aristotelian logic through set theory, is that the primitive unit of knowledge is the object: a discrete, nameable thing, on which predicates, relations, and eventually mathematical structure can be hung. This paper examines a competing hypothesis, developed here from three independently-sourced bodies of material: that the primitive unit is not the object but the place — and that the object, the proposition, and even the point of classical geometry are secondary constructions, stabilized nodes in a prior network of places and the paths between them.

The argument is deliberately not built from a single tradition outward. It is built from convergence. Three bodies of material — none developed with reference to the others — independently locate meaning in a spatial primitive rather than an object primitive: San testimony about "place" as the ground of kinship and story; Lakoff and Johnson's account of embodied, image-schematic cognition; and the homotopical semantics of type theory, in which identity is reinterpreted as a path in a space rather than a static relation between fixed objects. Structural convergence across unrelated systems is treated here as the primary form of evidence, consistent with an ecological-rationality and track-record standard of assessment rather than a hypothetico-deductive one: the claim is not proven by any single system, and is not falsifiable in the narrow sense, but its robustness increases with the number of independent domains in which the same pattern recurs.

2. Three Independent Sources for a Spatial Primitive

2.1 San spatial epistemology: place before kinship, before narrative

The Bleek–Lloyd archive, compiled in Cape Town between 1870 and 1884 from testimony given by incarcerated |Xam-speaking narrators to the philologist Wilhelm Bleek and his sister-in-law Lucy Lloyd, remains the single largest surviving body of first-person |Xam San testimony, running to roughly 13,000 manuscript pages, and constitutes the primary empirical evidence for this strand of the argument.

Across this material and the wider southern African San ethnographic record, place functions as more than a location: it is the point from which kinship, right of access, narrative, and cosmological order are generated. Megan Biesele's fieldwork among the Ju/'hoan records origin narratives in which specific landscape features — a hill, a pan, a set of stars rising over a particular horizon — are the fixed point around which weather, ancestral action, and story are organized, rather than being incidental settings for events that could in principle happen anywhere. Comparative ethnography of Khoisan-speaking peoples similarly documents that rights, obligations, and identity are articulated primarily through named relationships to place rather than through possession of objects.

The working claim, consistent with this material, is that in San epistemology the sequence runs place → orientation → relation → event → meaning, rather than the more familiar Western sequence of event → response, or object → property → relation.

2.2 Lakoff and Johnson: embodied cognition and the image-schema

George Lakoff and Mark Johnson's programme in cognitive linguistics argues that abstract reasoning is not autonomous from the body but is structured by recurring patterns of bodily and spatial experience — image schemas — of which the most consequential for this paper is the source-path-goal schema: a trajector moves from a starting location, along a path, to an endpoint. Container, near/far, and center/periphery schemas play a comparable structuring role. On this account, even highly abstract domains such as time, causation, and morality are understood by human beings via metaphorical projection from these spatial schemas, not via disembodied logical primitives.

The methodologically important point for this paper is where Lakoff and Johnson locate the starting primitive. It is not the proposition and it is not the object category. It is a bodily location in a structured space, together with the paths available from it. Meaning, on this account, is generated by movement between places, not by predication over objects.

2.3 Homotopy Type Theory: identity as a path between points

Homotopy Type Theory (HoTT), developed out of Vladimir Voevodsky's univalent foundations programme and set out systematically in the 2013 collaborative volume produced at the Institute for Advanced Study, reinterprets the basic notions of type theory through a homotopical lens. A type is treated as a space (up to homotopy equivalence); a term of that type is treated as a point in that space; and, critically, the identity type — the type that in ordinary logic would encode the proposition "a equals b" — is reinterpreted as the space of paths from point a to point b. A proof that two things are equal is, formally, a path between them. Transitivity of equality becomes path composition; symmetry becomes path inversion.

This is a genuine formal precedent, not a metaphor imported from outside mathematics: HoTT is an existing, actively developed foundational programme in which "place" (point-in-a-space) and "path" are literally more primitive than the classical notion of a fixed, self-identical object, and in which sameness itself is redefined as the existence of a path rather than as a property an object simply has.

3. Structural Convergence

The three traditions above were not developed in contact with one another and address entirely different empirical and formal domains — nineteenth-century ethnographic testimony, twentieth-century cognitive linguistics, and twenty-first-century mathematical foundations. The claim advanced here is not that they are the same theory, nor that any one of them derives from or explains the other. It is that they exhibit the same three-term structural pattern: a place, a path from that place, and a form of coherence (kinship, meaning, or mathematical equality) that the existence of the path secures.

Structural role	San epistemology	Lakoff / Johnson	Homotopy Type Theory
Primitive unit	place ("my / our place")	embodied location	point (term of a type)
Connector	kinship / travel relation	source-path-goal schema	path (identity type)
What is generated	narrative, right of access	metaphorical / abstract meaning	higher paths, equivalence
Ground of "sameness"	shared place, shared story	embodied conceptual coherence	existence of a path (univalence)

Read this way, a candidate formal primitive can be stated: not a single element, written simply as a point, but an ordered pair of places together with the possibility of a path between them, schematically (\cdot, \cdot) rather than \cdot . On this reading, a path is more primitive than a static relation, and truth or sameness is not a free-standing property of a proposition or an object but a property of a path that successfully connects two places. This reformulation is offered here as a hypothesis to be developed, not as an established equivalence between the three source traditions.

4. Historical Arc: The Occlusion of Place

If place is in some sense the more primitive notion, a further historical question follows: at what point, and by what mechanism, did formal Western knowledge systems substitute the object, the coordinate, or the proposition for the place as their basic unit? A provisional, coarse-grained sequence can be sketched — San spatial-relational epistemology; Greek abstraction to the object and the category; the Cartesian reduction of place to coordinate; Newtonian abstraction to the point-mass; Maxwellian abstraction to the field; and the further abstraction of modern formal logic to the proposition stripped of any residual indexical "here" — with each step trading a further degree of situatedness for a further degree of generality and manipulability.

This sequence is presented here as a hypothesis about where to look, not as an established historiographical result: identifying the specific texts, practices, or institutional shifts at which "place" was formally dropped as a primitive — for instance in the transition from projective, viewpoint-dependent geometry to coordinate geometry — is a distinct piece of further work, requiring direct engagement with primary sources in the history of mathematics and philosophy, and is flagged here as the natural next stage of the programme rather than something this paper resolves.

5. Relation to Projective Perspective

A further data point, external to the three traditions above, comes from projective geometry, where a perspective is not merely a vantage point but the structure that determines which relations (for example, which lines appear parallel) hold at all. In projective geometry, whether two lines meet is not an intrinsic, place-independent fact; it is relative to a chosen center of projection. This is consistent with the paper's broader claim: that relational facts of this kind are only well-defined relative to a place, or a family of places, from which they are viewed — a further, independent instance of the same underlying pattern rather than a metaphor imported for rhetorical effect.

6. Status of the Hypothesis and Relation to Adjacent Work

This paper deliberately stops short of claiming a proof or a unification. What is established is: (a) a well-documented ethnographic record in which place functions as the epistemic anchor for San kinship and narrative; (b) a well-established cognitive-linguistic theory in which spatial image-schemas ground abstract meaning; and (c) a well-established mathematical foundations programme in which identity is formally a path in a space. What is proposed, and is not established, is that these three are manifestations of one underlying pattern, and that this pattern can be given a single formal statement of the kind sketched in Section 3.

This programme sits alongside, but is kept analytically separate from, the author's other active research threads — including the quaternionic rewrite-system work on Rowlands' nilpotent formulation of Maxwell's original quaternionic electrodynamics, and the broader Semantic Panarchy programme on lexicon formation. Any connection between the place/path pattern developed here and quaternionic or Cayley–Dickson algebraic structure is a further hypothesis, to be developed in a separate paper once the present, narrower claim has been tested on its own terms.

Consistent with an ecological-rationality standard of evaluation, the appropriate next tests are not laboratory falsification experiments but further instances: does the place-path-coherence pattern recur in additional independently-evolved knowledge systems (other hunter-gatherer epistemologies, other foundational programmes in mathematics, other traditions in cognitive science)? Robustness under this kind of accumulating, real-world variation — rather than a single decisive experiment — is the relevant criterion of support.

7. Conclusion

Three independently-developed bodies of material — |Xam San testimony on place and kinship, Lakoff and Johnson's embodied cognitive linguistics, and the homotopical semantics of type theory — converge

on a common structural pattern in which place, not object, functions as the primitive, and in which paths between places, rather than static relations between fixed things, ground meaning and sameness. This paper treats that convergence as the beginning of a research programme: a candidate formal primitive has been stated, a historical research question has been posed, and the next steps — locating the specific historical mechanism by which place was dropped from formal Western systems, and testing the pattern against further independent traditions — have been identified without being resolved here.

References

Univalent Foundations Program. (2013). *Homotopy Type Theory: Univalent Foundations of Mathematics*. Institute for Advanced Study, Princeton. Available at homotopytypetheory.org/book.

Primary source for the homotopical interpretation of identity types as paths between points; the type-as-space / term-as-point / identity-as-path correspondence set out in Section 2.3 is drawn directly from this volume.

Lakoff, G., & Johnson, M. (1999). *Philosophy in the Flesh: The Embodied Mind and Its Challenge to Western Thought*. New York: Basic Books.

Core statement of the embodied-cognition programme and the source-path-goal / container image-schemas used in Section 2.2.

Lakoff, G., & Johnson, M. (1980). *Metaphors We Live By*. Chicago: University of Chicago Press.

Earlier foundational statement of conceptual metaphor theory, extended and philosophically developed by the 1999 volume above.

Bleek, W. H. I., & Lloyd, L. C. (1911). *Specimens of Bushman Folklore*. London: George Allen & Co. See also the digitized archive at digitalbleeklloyd.uct.ac.za.

Primary ethnographic-linguistic source: verbatim |Xam testimony (c. 1870–1884, c. 13,000 manuscript pages), the empirical basis for Section 2.1.

Biesele, M. (1993). *Women Like Meat: The Folklore and Foraging Ideology of the Kalahari Ju/'hoan*. Johannesburg: Witwatersrand University Press.

Ethnographic fieldwork among the Ju/'hoan documenting place-anchored origin narrative and cosmology, used in Section 2.1 as a comparative, twentieth-century complement to the nineteenth-century |Xam archive.

Barnard, A. (1992). *Hunters and Herders of Southern Africa: A Comparative Ethnography of the Khoisan Peoples*. Cambridge: Cambridge University Press.

Comparative ethnographic synthesis across Khoisan-speaking peoples, used to support the claim that place-anchored relational identity is a general, not an isolated, pattern in the region.

Awodey, S. (2012). *Type Theory and Homotopy*. In P. Dybjer, S. Lindström, E. Palmgren, & G. Sundholm (Eds.), *Epistemology versus Ontology, Logic, Epistemology, and the Unity of Science*, vol. 27, pp. 183–201. Dordrecht: Springer.

Independent, earlier statement of the type-theory / homotopy correspondence, useful as a shorter secondary entry point to the material formalized in the 2013 HoTT book.

Open Items for Follow-Up

- Locate the specific historiographical mechanism (text, practice, or institutional shift) by which "place" was dropped as a primitive in the transition from projective to coordinate geometry — direct engagement with primary sources required before this can be asserted as more than a hypothesis.
- Test the place–path–coherence pattern against at least one further independently-evolved knowledge system, to strengthen the convergence argument beyond the three traditions used here.
- Only after the above: examine whether the place/path pattern connects to the author's separate quaternionic rewrite-system and Semantic Panarchy work, as its own, explicitly flagged hypothesis rather than an assumed link.