CHAPTER 15

Five Theses on *De Re* States and Attitudes

Tyler Burge

I shall propose five theses on *de re* states and attitudes.* To be a *de re* state or attitude is to bear a peculiarly direct epistemic and representational relation to a particular referent in perception or thought. I will not dress this bare statement here. The fifth thesis tries to be less coarse. The first four explicate and restrict context-bound, singular, empirical representation, which constitutes a significant and central type of *de re* state or attitude.

The five theses are developed against a background rejection of Russell's notion acquaintance, a supposed perspective-free mental relation to an object. I regard Russell's view of reference as psychologically and epistemically naive. Analogs of the view have some recent advocates—both in naive realism about perception and in direct-reference views about language transferred whole to perception and thought. I regard such views as both empirically and conceptually untenable. I take Russell's view and its successors to be useful mainly as a foil or limiting position.

The theses are also developed against a background rejection of the view, often associated with Kant (mistakenly, I believe), that to perceive

a physical object, an individual must apply a battery of conceptual or linguistic resources. Examples of resources that perception of objects is supposed to depend upon are a conception of causal relations; an ability to locate oneself in an objective spatial framework; quantification, cross-reference, and identity; and so on.

Against Russell's view, I believe that perception and thought are fundamentally and ineliminably perspectival. Against the neo-Kantian view, I believe that it is clear—scientifically established—that perception, even of bodies, need not rely on conception, certainly not on any sorts of conception postulated in the neo-Kantian tradition. I will not discuss these alternative views here. I mention them only for orientation.

The first thesis formulates the perspectival nature of representation. The second outlines attributional resources necessary to perceptually based representation. These resources omit Russellian acquaintance but develop Russell's insight that singular representation begins at a primitive, preconceptual level. The third thesis holds that some of these attributional resources must apply veridically if perceptually based singular reference is to occur. The fourth sketches how these resources provide a basis for apriori knowledge, although they are much less rich than those postulated by the neo-Kantian views. The fifth outlines a nonempiricist conception of *de re* states and attitudes that builds on the empirical cases that dominate sections II and III. All the theses except the first are proposed in a conjectural spirit.

I start by saying a little about representation. Examples of representations are perceptual contents, concepts, representational thought contents, words, numerals, recordings, musical scores, photographs, diagrams, mimetic paintings. I take *mental* representations—including perceptual contents, concepts, and representational contents of thought—to be the basic sorts.[1] I shall concentrate on them. I assume a distinction between perception and propositional thought, and a companion distinction between certain components of their representational contents—perceptual attributives and concepts. I note differences as I go, but much of what I say applies to both perception and thought.

The title alludes to non-propositional representational *states*, particularly perceptual states, and propositional *attitudes*. I intend this nomenclature to be broad and fluid. My term "non-propositional representational state" is meant as a catch-all—to include perceptual events, perceptual states, perceptual capacities, perceptual memories, perceptual anticipations,

---

1. I am taking for granted here a distinction between perceptual representation and conceptual representation, as I did in "Cartesian Error and the Objectivity of Perception," in *Subject, Thought, and Context*, ed. John McDowell and Philip Pettit (New York: Oxford University Press, 1986). Also see "Perceptual Entitlement," *Philosophy and Phenomenological Research* 67 (2003): 503–548. I shall discuss the distinction in future work.

Throughout the essay, I use italics for emphasis or for designating foreign words, and underlining to denote representational contents.

perceptual imaginings, perception-dependent intermodal states, and per-
ception-guided actional states. My formulations of the theses for percep-
tion, perceptual memory, and so on, should be understood to cover all
empirical states of these kinds that are representationally directed toward
the world. The restriction is only that the "state" is to be representational
but not propositionally structured. My term "propositional attitude" is also
meant as a catch-all. It includes propositional states, events (including acts),
and capacities—broadly speaking, propositional thought.

The ontology of mental representation is largely unimportant here.
With caveats noted in section II, I take mental representations to be
abstract representational kinds, *not* particulars. Thus it is not assumed
that representations, or representational contents, are "mental objects,"
or token entities in individual minds. Individuals can share representa-
tions. Representations are ways of thinking or perceiving. So they have
"intentionality" or representationality. I do not distinguish between men-
tal representations and mental representational contents. I assume that
individuals have representational *states* and *capacities*, undergo represen-
tational *events*, and engage in representational *acts*. Representations (rep-
resentational contents) *mark* or *help type-identify* such states, capacities,
events, or acts. I leave open whether *instances* of such contents, repre-
sentation *tokens*, are always present in mental states or events in any sense
beyond the fact that state or event instances which the representations
mark are attributable to individuals. So I leave open whether conceptual
representations are always associated with a separately specifiable lan-
guage of thought whose "words" are tokens of the conceptual represen-
tations. (I do hold that such a language's syntactical tokens must be partly
type-identified by their representational content.) I also leave open how
representations and representational states and events relate to neural
states.

The reason why I regard concepts, perceptions, thought contents—
indeed all mental representations—as abstractions, not tokens in minds
and not "mental objects," is that I believe that fundamental explanatory
enterprises invoke in-principle shareable contents. The relevant funda-
mental explanatory enterprises are psychological explanation, accounts
of reference, and accounts of warrant and knowledge. The abstract con-
tents, as aspects of kinds, are essential for the explanatory and evaluative
aims of these enterprises. These enterprises do depend on reference to
the contents and to the states and events in the individuals. The contents
mark the states and events. And the states and events are tokened or
instantiated in individual persons or animals. But these enterprises do not
always *clearly* depend on reference to instances of contents over and
above the states and events. I have no doubt that some representa-
tions—conscious perceptions, for example—do have instances or vehicles
"in" individual minds. But I am not committed to the view that all do.
Thus many standing states need characterization in terms of representa-
tional contents. But whether there is a further instantiation of the content

in all such cases is, I think, a less empirically and explanatorily established matter. I think reference to the abstract representational contents is well established in empirical and normative enterprises.

[margin note: 3 explanatory roles for content]

The key points about representations—or representational contents—for our purposes concern their explanatory roles. There are three principal roles. First, representations are *about*, purportedly about, what is represented. A mental representation functions to represent. Some representations fail to represent, but they still function to represent. Mental representation helps constitute the representational perspective of an individual on a subject matter. Second, representations *mark* or *help type-identify* an individual's representational states, capacities, events, acts. Thus they are aspects of kinds of psychological states that are referred to in psychological explanation. Third, representations serve as ground for the application of representational and epistemic norms. As regards representational norms, an individual's representational states are evaluated by reference to whether representations are correct, true, or veridical. As regards epistemic norms, an individual's representational states are evaluated for warrant, rationality, and other types of cognitive "doing-well"—for how the use of representations meets certain standards, given the individual's perspectival and cognitive limitations. Reference to mental representations is well established in both scientific psychology and common sense.

I

The first thesis is that *mental representation is always representation-as*. The thesis rules out any view that maintains that one perceives, conceives, or thinks about objects, properties, or relations without doing so in any particular way that constitutes some perspective on them.[2] Any

---

2. This thesis is similar to David Kaplan's slogan "No mentation without representation." I do not know whether the slogan is supposed to entail that all mental phenomena are representational. The telegraphic term "without" allows various logical forms, and "mentation" is unspecific as between "mental phenomena" and "mental functioning processes." So I do not know whether I accept the slogan. If it entails that all mental phenomena are [margin note: objectification] representational, then I do not accept at least one reading of it. (Here I am using *my* notion of representation, which requires a degree of objectification, at least the simple sort involved in genuine perception. Mere functionally useful correlation does not suffice for representation in my sense.) I believe that there are qualitative mental phenomena that are not in themselves representational. For example, there is disfunctional qualitative "noise" in psychological systems. Moreover, I am doubtful that all mental (phenomenal) features of representational states are in themselves representational.

I have held the thesis that I state in the text for as long as I can remember. Whether or not my thesis and Kaplan's slogan use the same notion of representation, they both entail acknowledging that Frege's problem can arise for any particular position in a representational content: No matter how an entity is referred to, denoted, or indicated in thought or

view that rejects this thesis fails to accord with fundamental features of perception and thought.

The thesis is to be taken in this specific sense: *Every purported application, reference, and attribution in every content position in all thought and perception is perspectival and is carried through in a perspectival way: it is marked by some representational content, which constitutes a perspectival way of thinking or perceiving.*

I use "represent as" to entail "represent in a perspectival way" or "represent via representational content." And I take representing in a perspectival way to be equivalent to representing's having a mode of representation and to representing with representational content.

In perception we represent only through abilities that provide partial, incomplete, usually fallible perspectives on an actual or purported subject matter. Here the notion of perspective is concrete, commonly spatial-directional, sometimes phenomenological. One can have different perceptual representations from different perceptual perspectives on the same property, even representing it as the same property. This is the essence of perceptual constancy. Perceptual constancy is the ability to perceive the same object or property *as* the same object or property even though the perceptual mode of presentation, the perspective on the object or property, varies. The difference in perspective can derive from spatial, temporal, or phenomenological differences. One can also represent the same property in different sense modalities. These also commonly constitute different perspectives.

Parallel points apply to conception. With respect to conception in general, my term "perspectival" is more abstract. I am not specifically concerned with an individual's particular spatial or phenomenal angle on a subject matter, as one is in perception and egocentrically based spatial, empirical thought. Nothing so concrete is at issue in many cases of conception.

I take any representational content to *constitute* a perspective inasmuch as it is one of many possible ways of representing the same entity—one of many possible representational modes, representational contents. Our conceptual perspectives are not exclusive. They are to be distinguished from the entity itself. They constitute one of many ways of representing the same entity. And, normally, such ways can be correctly or incorrectly applied. Their application is fallible. In these abstract senses, they are perspectives on any entity that they succeed in representing. When representation fails, it still constitutes a perspective. The representer

---

perception, the same entity can be referred to, denoted, or indicated from a different perspective—marked by a different mental representation, a different representational content. Uniting the different perspectives constitutes a possible achievement, insight, acquisition of information, or realization of cognitive value. Note that for me singular context-bound applications (and pure demonstratives like <u>that</u>) count as representations-as. Subsequent theses place more restrictive conditions on singular representation.

can use different representational contents, even though there is no successful *representatum*. One can even represent, with different representational contents, what is purportedly the same entity, even though there is none.

Representation in both perception and propositional thought is type-identified to reflect representational abilities. It is not type-identified purely with regard to what its referent is. I write of such abilities as being perspectival on represented particulars, properties, relations, and kinds. We cannot perceive or conceive of anything without doing so in some way. The perspective or representational content is always one of many that could actually or purportedly apply to the same entity. The perspective is usually fallible. It is answerable to standards of accuracy, well-functioning, and warrant. Since perspectives are ways of perceiving or conceiving, the perspectives are limited by the finite, partial, fallible abilities that they mark or help type-identify.

I take the first thesis as axiomatic here. I believe that it cannot be reasonably denied. I think that it would be absurd to think that finite beings can perceive or think about ordinary objects or properties *neat*. We cannot perceive or think about them without doing so in some representational, perspectival, cognitively limited way. No mental representational ability corresponds to a view that would deny the thesis. We lack cognitive power to perceive or think of ordinary entities in no way at all, or to incorporate them whole into perception or thought—apart from any representational means that constitutes one of many possible perspectives on them, perspectives that mark not just positions in space, but limited perceptual or conceptual abilities.[3] Mental representations mark or help type-identify states, capacities, and events. To do so in ways that

---

3. God was said to have such a power to think of things without any general representation associated with the thinking. The power was called "intellectual intuition." I regard this view as of doubtful coherence. For present purposes I maintain the more circumspect view that such reference is impossible for finite beings. Their perspective on any entity is limited.

Russell held acquaintance to be the fundamental representational power. He made the mistake of attributing to acquaintance all the key nonperspectival aspects of intellectual intuition except that acquaintance was not in general supposed to bring the objects of thought into being.

Qualitative elements of consciousness are one thing. Singular representation of them (as referents or objects) in thought is another. Treating them as data for perceptual belief is a third. Russell runs these three things together in his notion of sense data. Russell took universals both as properties of objects and as perspectives of the mind on objects. I believe that this is another fundamental conflation. Russell provided no defense of his fantasy about human epistemology and about the mental abilities that go into making reference possible.

All of the foregoing concerns the nature of belief and human epistemology. It seems to me a separate question whether *linguistic* theory can abstract from the perspectival character of thought. Even in this area, I think that the perspectival character of linguistic representation is never fully obliterated in linguistic natural kinds. But this issue will not figure in what follows.

serve psychological explanation, mental representations must type the perspectival, limited abilities that we in fact have.

empirical grounds for thesis 1

The main grounds for the thesis derive from reflection on human abilities. There are empirical grounds as well. Psychological explanation takes operations on representations that type mental abilities as fundamental. The transformation and use of representations by perceptual subsystems cannot be separated in empirical theory from the end-product perceptual representations attributed to the whole animal or person, as well as to psychological subsystems.

II

The second thesis concerns conditions on singular, contextual, perceptually based, purported reference. The *main intuitive idea of the second thesis* is that singular, context-bound, perceptually based purported reference must be guided by a general representational content that is attributive.

attributives

The attributive element marks or type-identifies a representational ability—an ability to categorize referred-to particulars as instances of a type (instances of a kind, property, or relation), and to attribute the type to particulars. The attributive representational content functions fallibly to restrict the perceptually based singular reference to instances of the type. The perceptually based singular reference is to particulars, if to anything.[4]

The second thesis and its companion, the third thesis, are versions of an old idea: Singular reference must be guided by general attributives. My version liberalizes traditional views in two respects. First, the attributions can be perceptual as well as conceptual. Second, the relevant attributed types can be more generic and less sophisticated than the sortal types usually postulated.

"liberalizing" traditional views of singular reference

Sometimes philosophers sympathetic to Russell suggest that representational contents stand "between" the individual and referents of his thought, and then cast aspersions on such indirectness or mediacy. I think that this is an absurd characterization. Representational contents are ways of thinking or perceiving. There is no alternative to perceiving or thinking in some way, from some perspective. The idea that the representational contents that help type-identify perceptual or propositional states, and that mark those states' perspectives, are intermediaries, mental objects, screens, or detours between individual and ordinary referent is a product of elementary misunderstanding that rests on cartoon-like philosophizing. I discuss empirical grounds that support the thesis in my "Disjunctivism and Perceptual Psychology," *Philosophical Topics* 33 (2005): 1–78. I believe that these grounds overdetermine more general considerations.

4. This main idea extends, I think, to context-bound perceptually based pluralized reference as well. It too must be guided by a general attributive. Context-bound perceptually based plural reference depends on and is grounded in a multiplicity of singular references. I will concentrate mainly on singular reference, discussing plurals only intermittently. I recognize, however, that the thesis has this broader application.

I shall develop these two points of liberalization. The main work of the initial parts of this section is, however, to explain, in much greater detail and precision than traditional accounts do, key concepts that lie behind the main idea. By providing clear and relatively precise explications of the key concepts, I hope to be in a position to argue for the second thesis in an illuminating way. This argument will occupy the penultimate subsection of this section II.

I turn to the explication of some key concepts. This explication will be rather extensive. I ask the reader's patience. A full statement of the second thesis, and the argument for a restricted version of it, will employ the explicated concepts.

Attribution and Singular Application

The key notion in the second thesis is attributive. I take this notion as primitive. An *attributive* is a representational content that constitutes a particular way of representing and attributing a kind of individual, a property, or a relation to particulars or to other entities. Any given attributive is one of many possible ways of attributing whatever it attributes. It is a mode of presentation of what it attributes. Attributives are *general* types of representational content. The specific respects in which attributives are general will be the topic of detailed discussion shortly.

Attributives take different forms in thought and perception.

Attributives in thought are predicative concepts. As I use the term "thought," thought is always propositional. So attributives in thought are always components of propositional structures. I assume as evident that every (propositional) thought contains some predicative concept.

Perceptual attributives are general elements in perceptual representational content that type purportedly perceived particulars as being of kinds, or as being or having properties, or as being or entering into relations. Perceptual attributives are what allow perception to be perception *as*, or *as of*. Perceptual attributives are general elements in representational content that help discriminate purportedly perceived particulars by characterizing purported aspects of them. Every perception contains some perceptual attributive or attributives.

One might perceive a particular individual as a body, or as red. Or one might perceive an instance of red as (an instance of) red. Or one might perceive one individual body as being larger than another. Or one might perceive an instance of the relation being next-to as such.

Veridical or accurate perception is always of particulars. *All* perception (perceptual representation)—veridical or not—functions to be of particulars. Since perceptual content, like thought content, constitutes conditions on veridicality, each perceptual representational content must contain one or more singular elements.

The second thesis will claim that all perception functions fallibly to attribute a kind, property, or relation (whether veridically or not) to each

of the particulars that its singular elements purportedly pick out. Perception is always perception *as*, or *as of*. Each singular element in perceptual representational content is guided by a general, attributive element in the representational content. Context-dependent plural representations, which in perceptually based thought are basically groupings of singular representations, are also guided by a general, attributive element.

The second thesis will place a restriction on certain purported representations of *particulars* in certain sorts of thoughts and in all perceptions. What types of *particulars* can be perceived or thought about? Neither thought nor perception is always of individual objects, even when veridical. Particulars include individual objects, events, (particular) masses or stuffs, surfaces, property instances, and relation instances. Ontology does not matter very much for present purposes. Accounting for perception requires, I think, at least these types of particulars. Other types may be relevant as well.

The second thesis will claim that wherever perception purportedly singles out a particular, perception also functions to attribute to the particular a kind, property, or relation. A similar point applies for perceptually based thought. For example, one can perceive or perceptually think about a given instance of the property *red*, correctly, as being (an instance of) red. Or one can perceive or perceptually think about a given instance of the property *red*, mistakenly, as being (an instance of) orange. These purported singlings-out are marked in the representational contents of perception and thought.

In principle, an attributive can fail to indicate any real *type*—any real kind, property, or relation—just as perception or thought can involve referential illusion in such a way that a singular element fails to single out a *particular*. So in perceptually based representation, there can be referential illusions about particulars and attributive illusions about types. In the latter cases, the attributive cannot succeed in attributing a kind, property, or relation. It can still purportedly attribute, or function to attribute, or occur attributively. (I use these phrases interchangeably.)

Thus one can perhaps think of oxygen as phlogiston. Let us suppose, what I think is correct, that there is no such property as phlogiston. There is a phlogiston-attributive that functions to attribute, or occurs attributively. One thinks a thought. The attributive in the thought is predicatively applied. We are supposing that it is predicatively applied to oxygen. But no property or kind is actually indicated, and no property or kind is actually attributed to oxygen.[5] Still an attributional thought about oxygen has been thought, and the thought has used the attributive *phlogiston*—an attributive that does not indicate or attribute any property.

5. Failures of property or relation indication occur more rarely in perception than in thought. But the details are unimportant here. What is important for our purposes is that the reader maintain a clear distinction between the perceptual attributive (a certain type of representational content), what it indicates and attributes (a kind, property, or relation—an attribute), and what it attributes something *to* (a particular).

Perceptually based representation

The second thesis will be stated for *perceptually based* representation. *Perceptually based representation* comprises perceptual representation and certain representation in propositional thought that is intuitively grounded in perception. More specifically, a *perceptually based representation* is a perceptual representation, or a perceptual memory, or a perceptually guided actional state, or an intermodal non-propositional perceptually grounded state, or an empirical propositional thought (or component of such a thought), or any other psychological state or event *that purports to represent a specific particular through perceptual resources*. The singular elements in perceptually based representation are certain kinds of *applications*. Such applications are context-bound representational contents that are *individuated in terms of specific occurrences in time*.[6]

A singular application in a *perception* is an occurrent aspect of the perception whose function is to refer to a particular. A singular application in a perceptually based representational content in *thought* is a context-bound element in the thought content that is individuated in terms of an occurrence in time and whose function in the thought is to refer to a particular by way of perception. Such applications are the singular elements in the representational contents of perception or thought, alluded to six paragraphs back. I will say more about singular applications later.

plural representation

In perceptually based representation there is a phenomenon of *specific plural context-bound application*. Perhaps in perception and certainly in perceptually based thought, there is a phenomenon of representing those Gs, with the plural those applied to *specific* purportedly perceived particulars. I believe that *in perceptually based representation* such pluralized applications are grounded in multiple specific singular representations. To *perceptually* represent some dots with the representational content those dots (where this representation is contextually applied), one must be perceptually representing *each* dot represented by the pluralized representation. The context-bound, perceptually based pluralized representation is *not* equivalent to all the dots, where one allows generalization

---

6. I will use "application" primarily for singular context-bound applications, and I will often not qualify "application" with "singular" even though I intend singular applications. I take all singular applications to be context-bound.

There are also pluralized demonstrative applications. And I do occasionally use the term "application" for a closely related phenomenon (as I did in the preceding paragraph of text) that is not a type of reference—singular or plural. I use the term for *predicative application*, or more generally *attributive application*. *Attributive application* is an occurrent exercise of attribution (or an attribution individuated in terms of some occurrent exercise)—as distinguished from an occurrent exercise of context-bound singular reference. It is part of the point of the second thesis that all singular application occurs together with attributive application. It should be borne in mind that not all singular applications are perceptual or perceptually based. Some, like applications of I or now, do not depend for their reference on perception at all. In this section, I concentrate entirely on perceptually based representation.

to be restricted to the dots in a certain region, including perhaps some that are not individually perceived. One must perceive each dot that gets referred to in perceptually based pluralized representations.

Issues over plurals are complex and delicate. I will not attempt to provide a separate discussion of pluralized perceptually based applications. I think that the second thesis could be broadened to include them. That is, each pluralized context-bound perceptually based representation must be guided by a general attributive. But I will focus on singular representation, since I think that in *perceptually based* representation, plural context-bound application is grounded in singular context-bound application (cf. note 6).

The singular elements in perceptually based representation that must be guided by attributives are of two sorts. They include the context-bound singular applications in perceptions or perceptual memory that purport to single out perceived particulars. They also include the applications of demonstrative or indexical elements in thought guided by perception. Singular representations in pure mathematics are laid aside for purposes of this section. They are not, I think, perceptually based.

A more interesting exclusion concerns a type of singular, applicational element that occurs in all perceptually based representation—applications of *de se* markers or egocentric indexes. *De se markers* or *egocentric indexes* are indexical representations that meet two conditions. When applied, they represent an origin for a representational framework, such as a spatial or temporal origin from which the individual's perception occurs. They also mark the origin as of immediate ego-significance for the individual's motivation or for the wider perspective of the individual.[7]

I make applications of *de se* or egocentric indexes exceptions in the second thesis. Although these singular elements do single out particulars, I will not claim that they must be guided by attributives. Their references are held in place by their framework roles in a system of representation.

But singular applications of them on particular contextual occasions are not unrestricted. The applications are not atomistic or "bare." Applications of *de se* or egocentric markers are restricted by their position in the whole framework of coordinates and of attributions that they provide origins for. They could be regarded as a special case of a more general reciprocal dependence of context-bound singular elements on general attributions. But in formulating the second thesis, I want to make explicit the specialness of the case of *de se* markers or egocentric indexes. So I bracket them as far as the second thesis goes.

7. For discussions of egocentric indexes or *de se* elements in perception, see my "Perceptual Entitlement," and "Memory and Persons," *Philosophical Review* 112 (2003): 289–337.

Guidance

The *main intuitive idea* of the second thesis appeals to a notion of *guidance*. I take the notion of guidance as primitive. Still, we can give a rough characterization. An attributive *guides* a context-bound singular representation if, according to the representational content of the individual's overall representational perspective, the attributive is veridical of the particular purportedly referred to by the singular representation; and the attributive is used by the individual or his representational system as an important restriction on the singular representation's purported referent.

Of course, "important restriction" is vague. The relevant important restriction is intuitively an attribution of an *explanatorily significant type*. The attributive categorizes or sorts. The idea is that guidance by way of attribution of types enters into explanations of context-bound acts of reference, both merely purported and successful.

I think that called "Bill", perceived at some time, and grue are examples of representational contents that do not indicate explanatorily significant types that could guide perceptually based singular representation. They could not enter into explanations of context-bound acts of reference. They could not *guide* context-bound singular applications.

There are further restrictions on what sorts of types can guide singular reference through general attribution. Recall that guiding types can be kinds, properties, or relations. There are restrictions on mixing these types in order to yield guidance. For example, I think that attribution of the relation next-to cannot suffice to guide singular reference to instances of bodies or instances of redness. Attribution of relation types can only guide context-bound singular reference to relation instances. Thus a perception of a relation instance can be categorized as being of a relation type next-to or larger-than. But an individual or a property instance cannot be categorized *merely* by attribution of relations that it is perceived as being in. I leave open whether to perceive a relation, one must perceive an entity in the relation.

Similarly, attribution of a property type can guide context-bound singular reference to property instances, but cannot guide such reference to individuals or particular masses. For example, attribution of property types like redness and rough-texturedness cannot alone guide perceptually based reference to a body or a pile of material.

Again, attribution of individual-kind types cannot guide singular reference to property instances, though the veridicality of an attribution of an individual-kind type might entail the instantiation of certain properties constitutively necessary to being an individual of the relevant kind. Attribution and guidance are more fine-grained than entailment.

I do not try to work out a definite notion of categorization or guiding type here. I think of these notions, like the notion guidance, as primitive. The reader should note, however, that the restrictions that I have cited

are quite generic. Empirical reference to individual bodies, for example, does not require guidance by a sortal attributive that applies to middle-sized familiar kinds of bodies and that carries clear count criteria. I will return to this liberality in the account of necessary conditions on attribution and reference in section III.

I have been explicating the notion of guidance in the second thesis's claim that singular, context-bound, perceptually based reference to particulars must be guided by a general attributive. I do not, of course, hold that the representational power and content of such singular reference is exhausted by the guiding, general representations. I have long held that singular, context-bound reference is primitive and ineliminable in terms of conception, description, perceptual attribution, or any other general representational resources. The second thesis itself does not even claim that the nonschematic, semantically general representation must actually apply to, or be true of, the entity represented. Guidance has to do with the functional importance that the representational system must *accord* a general representation in determining the purported referent of the context-bound singular representation.

Attribution and Four Sorts of Generality

Central to the second thesis are certain notions of generality and context-dependence. I believe that the tradition of thinking about attribution has not clearly distinguished these types of generality. Distinguishing them is, I think, critical to understanding psychological representation. In this large subsection, I will explicate these notions of generality and how they bear both on understanding attribution and on understanding how attribution restricts singular, context-bound reference.

The reader mainly focused on the bigger picture, and less interested in detailed understanding, can try to hold in mind the main ideas of the second thesis and move to the argument for a restricted version of the second thesis (two subsections hence) and to section III. I think, however, that a firm foundation for understanding the relation between context-bound singular representation and attribution requires a firm understanding of the relevant types of generality. This section will have some of the character of philosophy of logic. I will try, in some depth, to distinguish notions of generality that are easily conflated.

Summary of the four sorts of generality

I will distinguish four sorts of generality in mental representational content. None of these sorts is quantificational generality. One is the generality that concerns the kind of ability (partly) type-identified by the representation. It bears on whether the ability is individuated independently of any particular, specific exercises of it. A second is the generality that concerns how a representation applies to a subject matter—whether by its form and content it can apply to any number of satisfiers or referents. A third is a kind of "syntactical" or logical-functional generality. Finally, there is a kind of generality that requires by its content

a context-dependent act or occurrence in order to apply to a particular. This generality is open to, but unspecific with respect to, context-dependent reference. These are very abstract, overview characterizations of the kinds of generality that I will distinguish in this subsection. I turn now to more specific characterizations.

ability generality   The first sort of generality, *ability generality*, pertains to types of representational content that mark general, freely repeatable representational abilities. The abilities and the representational contents that mark them are not constitutively dependent for their identities, or for their *relations* to what they represent, on any *particular*, *specific* set of token applications or representational events (whether these are attributional applications or singular applications). They are not simply abstractions from some particular, specific token application(s) or representational event(s).[8] They are individuated, and may be learned or innately "wired in," through acquiring or inheriting a *kind* or *type* of ability. Commonly these abilities are geared to situations or entities of a given type. Such abilities may be—and usually are—dependent for their presence on being constitutively associated with some token applications or other. But if a representational type marks a general ability in this sense, any exercise of an appropriate kind would do. There is no *particular*, *specific* application or representational event, or any *particular*, *specific* set of applications or representational events, to which the relevant abilities, and the representational contents that mark them, are *essentially* tied for their individuation, or their relation to what they (purportedly or actually) represent. Individuation goes through a pattern-based type of ability.

All perceptual attributives—representations of kind, property, and relation types—are general in this sense. For example, a perceptual attributive marking an ability to perceive something as a body, as red, or as larger than, is general in this sense. The concepts body, hydrogen, cylindrical, piano, three, tall, malicious, brother of, identical with, next to, the tallest spy ever, and the number 3 are also general in this sense. free repeatability   I call such representational contents *"ability general,"* since they type general psychological abilities. Such abilities are *freely repeatable*: There are no specific, *particular* token exercises or applications by reference to which the standing representational ability is individuated.

Ability general representational contents contrast with representational contents that mark a *token application* (or *applications*) by some individual perceiver or thinker, purportedly to a particular. I call both relevant acts or occurrent events (and abilities individuated in terms of

---

8. Which initial event or events count as the attachment of a name to an individual might not matter in socially shared cognition. Who is the first person to start an anaphoric chain of demonstrative reference to some putative particular witch will not matter to individuation, as long as a specific, contextually local set of events grounds subsequent demonstrative applications that go back anaphorically to those specific events.

such acts or events) and relevant representational contents "*applications*." We shall focus entirely on singular applications. Context will make clear which is meant—(a) act, event, ability, or (b) representational content marking an act, event, or ability—if the distinction is important. An application of a demonstrative construction in thought is *not* freely repeatable. The representation, or representational content, marking the act is *not* ability general: There are particular occurrent acts (or events) that are constitutive to the individuation of the occurrence or ability that the representation marks.

"that" as ability general vs. its non-repeatable application

A token application of a demonstrative-like construction in perception, language, or thought is to be strictly distinguished from the standing demonstrative construction itself. Thus a representational content marking a token (act) application of the expression "that," or of the standing demonstrative mental representation that, is to be strictly distinguished from the expression "that" and from the standing mental representation that. The standing mental representation that is ability general. The ability to use the demonstrative "that" and the ability marked by its standing counterpart in thought (that) are freely repeatable: No specific event is essential to the individuation of the ability to use and understand the demonstrative construction "that" or the counterpart standing demonstrative mental representation that. By contrast, an application representation is not ability general. It marks a specific act or event. The application act or event itself and any ability, or exercise of an ability, individuated in terms of such an act or event—for example, an anaphoric or memory ability—are not freely repeatable.

applications are not freely repeatable

Applications purportedly to particulars may be acts in thought—singular applications guided by concepts. Or they may be events in perception—singular applications, purportedly to particulars, of ability general perceptual attributives. Let us call representational contents that mark such acts or occurrences "*ability-particular*" (or "*context-bound*").

ability-particular contents

It is sometimes plausible to *identify* a singular application representation with a mental act or event. But ability-particular or context-bound representations—representational contents that mark applications—need not themselves *be* token acts or events. They may be abstractions that mark an act or event. Or they may mark an ability or act-type partly individuated in terms of a specific act or event. Although they must be individuated in terms of some particular, specific token application act(s) or event(s), they can be maintained or multiply instantiated over time. A representation that marks the application of a demonstrative in thought can be retained in memory after the token act that helps individuate the representation is past. And if the memory is invoked, the same application occurs again, purportedly to pick out the same particular by way of its anaphoric-memory relation to the original occurrent event of application. An ability-particular (context-bound) representation in thought can be maintained across thinkers, through interlocution. Preservation of context-bound representations, in both memory and

interlocution, has an anaphoric character. All such representations type-identify abilities individuated in terms of particular, specific token acts or events—not in terms of freely repeatable general abilities.

Token singular representations in thought are actively embodied by *particular token applications* of demonstratives like <u>that</u> or indexicals like I, and by pronominal back-references taking such applications as antecedents. As indicated, there are analogous context-bound singular representations—individuated in terms of token occurrences, if not acts—in perception.[9]

Paradigmatic concepts are ability general.[10] Attributive perceptual representations are, I think, always ability general.

I now turn to a *second kind of generality*. Most concepts and all perceptual representations that are ability general are general in a further sense. Most concepts and all ability general perceptual representations are capable, according to their form and content, of referring to, being true of, or being accurate of, an indefinite number of entities. Let us call such

Semantic generality

---

9. I discuss this singular sort of context-dependent representation, insofar as it occurs in *thought*, in "Belief *De Re*," *Journal of Philosophy* 74 (1977): 338–362, reprinted in my *Foundations of Mind* (Oxford: Clarendon Press, 2007); "Russell's Problem and Intentional Identity," in *Agent, Language, and the Structure of the World*, ed. James Tomberlin (Indianapolis: Hackett, 1983)—where I introduce the term "application"; and "Vision and Intentional Content," in *John Searle and His Critics*, ed. E. Lepore and R. V. Gulick (Cambridge, Mass.: Basil Blackwell, 1991). The idea is, however, present in my "Reference and Proper Names," *Journal of Philosophy* 70 (1973): 425–439, and "Demonstrative Constructions, Reference, and Truth," *Journal of Philosophy* 71 (1974): 205–223. I developed the role of applications in representational contents in which there is a failure of reference in "Russell's Problem and Intentional Identity." For a focused discussion of singular context-bound applications, see "Postscript to 'Belief *De Re*,'" in *Foundations of Mind*. The first thesis of the present essay is also enunciated in section II of this latter article.

I discuss singular applications as they occur in *perception* in "Perceptual Entitlement." Such perceptual singular elements are needed to account for the fact that individuals perceive particulars, which need not be—and commonly are not—uniquely specified by general perceptual attributions of aspects of the particulars. Individuals' perceptions and perceptual systems represent particular objects and property or relation instances that the perceiver interacts with. They represent those particulars, not look-likes that the perceiver is not interacting with. Analogous singular elements in thought are needed to account for the fact that we can think about objects that we do not fully specify through conceptual representations.

10. I am tempted by the view that all concepts are ability general. One might even take ability generality to be a necessary condition. There are, however, difficult issues here about certain historical proper names. Applying a name like "Aristotle" to the most famous Aristotle requires that one's usage connect to a historical chain that must be characterized in terms of a set of very particular applications. I believe that one's current usage involves an application of a schematic context-sensitive determiner (broadly a demonstrative) that, in use, connects with applications of determiners by other people, ultimately going back to initial applications of the name (or a cognate) to a perceived individual. So the name and the context-sensitive determiner are ability general concepts. But any given application, or file connecting to the chain going back to the most famous Aristotle, is ability-particular. Cf. my

representations "*semantically general*."[11] Most ordinary, noncomplex predicate concepts are semantically general. The concept <u>piano</u> is true of, and open to application to, any number of pianos according to its form and content—even if there were in fact only one piano, or no pianos at all. A visual perceptual attributive representation <u>square</u> is veridical of any visible square entity. A representation is *semantically singular* if its form and content require that it have exactly one referent or satisfier, if it has any. Examples of semantically singular representational contents are <u>the number three</u>, <u>the present king of France</u> (where <u>present</u> is applied), <u>is identical with 3</u>, <u>is the only seven-foot spy ever</u>.

Semantic generality is to be contrasted not only with semantic singularity but also with plural representation that is restricted to specific pluralities of entities. Unapplied, <u>those dots</u> is semantically general. According to its form and content, it can refer to an indefinite variety of dots (in various contexts). But *applied* in context-bound perceptually guided thought, <u>those dots</u> and <u>those 7 dots</u> refer to neither an indefinite number of dots nor to exactly one dot. Similarly, with the concept <u>prime number between 1 and 17</u>. I will count such representations *semantically restricted-plural*.

Syntactic generality is a third sort of generality. Grammar and logic distinguish between singular and general terms. I think that this distinction ultimately rests on representational role. The linguistic distinction has a counterpart in perception and thought: *Syntactically singular* representations are representational contents that function to *refer to* one entity, if to any, when used in a complete sentence, thought, or perception.

Margin note: Syntactic generality

"Reference and Proper Names," *Journal of Philosophy* 70 (1973): 425–439. Whether all noun-like concepts that have this sort of historical specificity can be correctly construed in this way seems to me an open question. Perhaps to learn the concept expressed by "the United States of America," one has to have been connected to a chain of communication that goes back to a few events associated with the founding fathers. Perhaps not. Whatever the truth of this matter, I continue to think that the distinction between ability general and context-bound representations is an illuminating one. I think that with regard to either most or all concepts, the conceptual abilities are not *explained* or *grounded* in terms of any *specific particular* events. Any events of a certain type would do.

11. I have changed "formally general" in "Descartes and Individualism: Reply to Normore" to "semantically general" here. (The account is also more precise here.) I concluded that the relevant generality is more fundamentally about content than form, though it is associated with both. I do not like the suggestion of language in "semantically general." I use "semantically" in a broad sense that includes not only relations between signs and what they represent but relations between any representations (including representational contents) and what *they* represent. Here we are concerned with mental representation. In some ways "content general" would be a better term. But it leads to grammatical awkwardness.

Margin note: broad sense of "semantically"

In my terminology *veridicality* pertains to both perceptual and propositional representations; truth pertains only to propositional representations. Similarly, <u>veridical of</u> pertains to attributive perceptual and attributive conceptual representations, whereas <u>true of</u> pertains only to attributive conceptual representations.

For present purposes, I take *syntactically general* representations to be those that function (usually fallibly) to be *veridical of* one or more entities. Thus they are representational contents that are predicative or attributive. For present purposes, syntactically general representations are representations whose roles are predicative in thought and attributive in perception or perceptual memory.[12]

(Context-Dependent) Schematic Generality

A fourth type of generality is what I call "*context-dependent schematic generality*," which for purposes of this essay I will shorten to "*schematic generality*." Representational contents that are or contain indexical or demonstrative representational contents, where the indexical or demonstrative contents are to be strictly distinguished from context-bound applications of them, are *schematically general*, or just *schematic*. To be schematic, a representational content must need a completing context-bound application to have a definite referent or satisfier, and to occur in a perception or in a complete thought. A context-dependent representation unapplied is simply a schema for reference or attribution, applicable in any of various contexts. Even when the context-dependent representational content is applied, it in itself, as distinguished from the representational content that includes the application, is schematic.

Any representation containing demonstrative or indexical elements like <u>this</u>, <u>that</u>, <u>here</u>, <u>now</u>, <u>then</u>, <u>today</u>, <u>I</u>, <u>she</u>, <u>such</u> will lack a definite referent (or, in the last case, satisfier) apart from an application in a context. According to their form and content, they need a context-bound application if they are to occur in a perception or perceptual memory (for perceptual analogs of <u>that</u>, <u>now</u>, or <u>here</u>) or in a complete thought. So any such representation is schematic. Similarly for egocentric

---

I define semantical generality in terms of satisfiers or referents. A more inclusive definition might cover what some regard as syncategorematic concepts. These are concepts that are ability general, but that do not have a referential or applicational function. Some have thought that quantifiers and logical connectives are examples. They cannot suffice to *guide* context-bound, singular representations.

12. I believe that ultimately syntactic generality is a wider category than I have explicated here. Here I take it to be almost equivalent to being attributive. (Almost: I am inclined to think that <u>is such</u> is syntactically general, and predicative, but in itself not attributive. In itself this schematic representational content is not capable of attributing anything.) In perception, the equivalence between syntactic generality and attribution holds, I think, even if one widens the category of syntactic generality. Thus I believe that among perceptual representational contents, all and only syntactically general representational contents—all contents that function to be veridical of—are attributive. In thought, syntactic generality ultimately should be characterized widely enough to include not only predicative concepts but also function concepts (<u>the father of</u>), quantifier concepts, connectives, context-independent determiners, and so on. Not all of these are attributive. I think that the root idea of this wider notion of syntactic generality resides in the notion of there being an open place (for a variable, or schematic representation, or dummy representation) in the syntactic form of the representation that indicates that the syntactical items *operate on* something further. I believe that this is what Frege was getting at with his idea of an unsaturated expression.

or *de se* markers, insofar as they are unapplied or are strictly distinguished from their application.

Schematic representations are commonly complex and contain a mix of elements.[13] Some elements, the schematic, context-dependent ones, mark a general ability to exercise the completing context-bound application. Some mark a general ability to restrict, in a context-independent way, the context-bound applications. Thus that sofa (unapplied) contains, first, the demonstrative that, which (as unapplied) marks a schematic capacity to exercise context-bound, singular application, and, second, the concept sofa, which marks a general ability to restrict context-bound application in a context-independent way. (The concept marks inferential abilities as well.) The demonstrative that, unapplied, contributes the schematic element to the complex schematic representation. That is *purely schematic*. There is no restricting element. It is unrestrictedly, completely open to any singular application in any context. The context-independent restricting element in the complex schematic representation (here, sofa) will be called "*nonschematic*." Both are components of a complex schematic representational content.

These four types of generality will help clarify what sort of attribution must guide singular context-bound perception based representation. But first I want to try to solidify understanding of these different types. The four types of generality largely cut across one another. They are certainly demonstrably distinct types. To fix and clarify these rather abstract notions, I will give examples that map the relations among the different types. The complex relations among the different types of generality may be more than the reader will want to work through. The argument for the second thesis will rely on a clear understanding of the different types, but the impatient reader may get by with skipping the next seventeen paragraphs.

Ability general representations can be semantically general or semantically singular. The concepts brother, kind, moving, and larger than and perceptual attributives like red and body are ability general and semantically general.

Several types of ability general representations are semantically singular. One type comprises complete definite descriptions (conceptual or linguistic): the natural number that immediately follows one, the human being alive before 2000 with the greatest rest mass, and the shortest spy ever are examples. Another type comprises certain semantically singular, context-independent predicates: identical with 3, natural number

---

13. There are complications here regarding containment, especially in indexicals, that I shall elaborate later. Note that there are semantically general, syntactically general, schematic representations, like such, next, later. The second thesis applies to applications of these representations. Any application requires a guiding attributive that is nonschematic, semantically general, ability general, and syntactically general.

between 2 and 4, identical with the shortest spy ever, and so on. A third type of ability general, semantically singular representational content, including even noncomplex representational content, comprises individual concepts such as 3, 1 + 2, God, perhaps Earth, the concept hydrogen, and that 7 plus 5 is 12.[14] Like paradigmatic semantically general concepts, these *individual concepts*—simple and complex—mark freely repeatable psychological abilities. Having the concept is an ability that is not individuated in terms of specific token acts or events of application. It is individuated by a cluster of inferential, applicational, and predicational abilities. These abilities may, of course, be partly individuated in terms of types of application and types of relations to a subject matter. But no particular representational events of application are essential. Yet in each case the representational content must single out one entity if it represents anything. Similar points apply to the other cases of ability generality combined with semantic singularity.

I believe that in *perception* all ability general representations are semantically general. Ability general representational contents that are either semantically singular or semantically restricted-plural occur only in thought. All singular representation in perception is purported context-bound reference to definite particulars. All attributive representation in perception is open to an indefinite number of satisfiers. Restriction to specific, definite satisfiers of attributives in perception occurs only through context-bound representation in response to a cause in context. Such context-bound representation is not ability general.

As far as I can see, noncomplex ability-particular (context-bound) representational contents in both perception and thought are never semantically general. They can be semantically restricted plural or semantically singular, but not semantically general. An example of noncomplex context-bound representational contents that is semantically restricted-plural is an application of a plural demonstrative. The fundamental case of noncomplex, context-bound representational content is singular application. Although they are simple, noncomplex singular context-bound applications never occur apart from a restricting attributive. That is the thrust of the second thesis, which we are leading up to.

Ability-particular or context-bound representational contents can, however, be semantically singular, semantically restricted-plural, or semantically general, if they are complex. The only mother of that person and that body (where that person and that body are applied) are ability-particular and semantically singular. Those dots (applied) is ability-particular and semantically restricted-plural, as is identical with 3 or

---

14. 3 is to be understood here as grammatically singular rather than as adjectival. I regard 3 as *not* composed of other concepts (such as one and plus). I discuss the point in section V.

Obviously ability general representations can be semantically restricted-plural.

that person (where that person is applied). Person from that city (where that city is contextually applied) is ability-particular but semantically general.[15] I conjecture that all such cases of ability-particularity combined with semantic generality involve complex representations. Applications are combined with semantically general, ability general elements; and the semantically general elements are not within the scope of the ability-particular elements.

Ability generality cuts across syntactic generality. The concept 3 is ability general and syntactically singular. The concept spy and the perceptual attributives square and next to are ability general and syntactically general. That red body (applied either in thought or in perception) is ability-particular and syntactically singular. Next to that red body (a perceptual attributive with that red body applied) and person from that city (with that city applied in thought) are ability-particular and syntactically general.

Ability generality also cuts across schematic generality. Unapplied schematic representational contents like this, today, and that person are both ability general and schematically general. Ability general concepts like ball and ability general perceptual attributives like square are nonschematic. Ability-particular representations like any referential (that is, nonattributional) application or like that body (including an application in perception or thought) are nonschematic. Ability-particular representations can be schematic if they are complex and only partially applied. For example, that ball is larger than that top, where that ball includes an application and that top is schematic and unapplied, is ability particular because of the application of that ball. But the same representational content is schematic because the context-dependent representation that top is unapplied.

Let us turn to the relations between the second type of generality, semantical generality, and the other types. We have already seen that semantical generality cuts across ability generality.

Semantical generality cuts across syntactic generality. The representational contents body, square, and next to (in perception or thought) are semantically general and syntactically general. Semantically general representations that are syntactically singular are representational contents such as that sofa, the only woman to hit that man, today, he, this, *insofar as they are distinguished from applications of them in a context.* Such representations can apply, by their form and representational content, to various referents. Nothing *in the form or content* guarantees at most one referent. The form and content can be supplemented by contextual application to yield single referents in each context, but indefinitely many referents relative to form and content. It is notable

15. As noted, there are perhaps context-bound semantically restricted-plural representations in perception. There are certainly such representations in thought (those quartets, applied to definite quartets).

that all these cases of semantical generality *cum* syntactic singularity are schematic.[16]

Examples of semantically singular and syntactically singular representations are that body and now (each including an application in perception or thought) and the concepts 3 and the shortest spy. Semantically singular but syntactically general representations are identical with 3 and uniquely greatest composer ever.[17] Although the matter is complex and speculative, I am doubtful that examples of this sort occur in the representational contents contributed specifically by perceptual systems. Conceptual examples tend to be syntactically complex.[18]

What of the relation between semantical generality and schematic generality? Examples of semantically general representations that are schematically general are simple unapplied demonstratives or indexicals like that, now, we. Semantically general representations that are not schematically general include semantically general representations that lack any schematic elements. For example, the attributives body, square, and later than (perceptual or conceptual) are semantically general but nonschematic. Semantically general representational contents that are not schematically general also include semantically general attributives that contain schematically general elements together with their applications. Taller than that man (where the representational content includes application of the schematically general that man) is an example. That man itself is schematically general, but the whole representational content is not.

Obviously semantically singular representations can lack schematic generality—3, the shortest spy ever, and that body (application included). And semantically restricted-plural representations can lack schematic generality—the natural numbers between 2 and 5.

16. There is presumably a *syntactic* category of pluralized definite reference, illustrated by the schematic demonstratives those, they, we, you (plural), and so on. The schematic demonstratives do not have the role either of singular reference or of being veridical-of. Their role is plural reference.

17. I believe that there are no cases of semantically singular, syntactically restricted-plural representations. I take it that syntactically restricted-plural representations are devices for reference not for being veridical-of. But the pluralized syntactical form would prevent reference to a single entity. So either the syntactically restricted-plural is unapplied and semantically general, or it is applied and semantically restricted-plural.

18. Thus in this case, a semantically singular, syntactically singular representation (here, 3) restricts the semantical generality of a noncomplex predicative representation (here, is identical with). In "On What There Is," in *From a Logical Point of View* (New York: Harper and Row, 1953), Quine coined syntactically general terms from singular terms—coined terms like "Pegasizes" or "Socratizes." Quine intended them to be semantically singular and noncomplex. I think that these expressions simply express the complex syntactically general mental representation is identical with Socrates. At least as used in a context (to apply to the most famous Socrates), this representation is an example of a complex syntactically general expression that is semantically singular. It may be important that natural noncomplex syntactically general representations that are semantically singular are hard to come by.

The relations of the third type of generality, syntactic generality, with respect to the second, semantical generality, have already been discussed. Syntactic generality also cuts across ability generality. Examples of syntactically general, ability general representational contents are simple perceptual attributives, and concepts like person and larger than. Examples of syntactically general, ability-particular representational contents are of such a color and person from that city (each with contextual application included).

Syntactically singular representations that are ability general are complete definite descriptions like the smallest prime and individual concepts like 3 and God. Syntactically singular representations that are context-bound are perceptions like that square body (application included) and applied representational contents in thought like that mathematician.[19]

Syntactically general representational contents can be either schematically general (such, such a color, person like her, all unapplied) or nonschematic (body, later than, square). Syntactically singular representational contents can be either schematically general (this, that body, unapplied) or nonschematic (complete definite descriptions, individual concepts, and representational contents like that body—with application included).[20]

The relations between the fourth type of generality, schematic generality, and the other types have already been laid out.

In developing the second thesis, I am primarily interested in the attributive elements in representational contents scope-governed by *perceptually based singular applications*. As long as all schematic elements are applied (singularly or in a plural-restricted way), the complex representations governed by perceptually based singular applications are nongeneral in all four senses of generality. Since the relevant representational contents are scope-governed by applications, and applications are individuated in terms of particular acts or occurrences, the representational contents cannot be ability general. Since the function of the applications is to refer to definite particulars, they cannot be syntactically general or semantically general.[21] Since the representational contents include applications of all schematic elements, the representational contents cannot be

[margin note: perceptually based singular applications are entirely singular]

---

19. Analogous cases can easily be produced of syntactically restricted-plural representations that are either ability general or context-bound.

20. Obviously syntactically restricted plural representations can be either schematic or nonschematic.

21. Applications of such are delicate. Such commonly simply functions as an anaphoric pronoun, going back to some predicative concept that occurs earlier. But this syntactically predicative schematic concept (such) can be combined with a demonstrative application. Such combinations are complex representations. I believe that, at least in perceptually guided cases, the demonstrative application is singular or restrictedly-plural. The application refers to an instance, or instances, of a type. The application is guided by an attributive (beyond such) that attributes a type, and such is understood to indicate that type. In

schematically general. Schematic generality is openness to application in various contexts, and hence in itself does not include application.

Applications of *de se* markers or egocentric indexes are special cases of these points. Like other singular applications, they are nongeneral in all four senses. Although such markers do not apply to perceived entities, their applications do establish origins for frameworks of empirical representation. The acts or events of application are themselves particulars, or are individuated in terms of particulars. Hence the acts of applications are not freely repeatable. Since representations that mark acts of applications are individuated in terms of such acts, they cannot be not ability general. An origin of an empirical framework must be a particular. Given that the function of representations that mark acts of application is to represent particulars in a singular way, they cannot be syntactically general. Representations marking events of empirical application cannot be semantically general because their reference, if any, is to particulars that occur in the specific context of the application. Although the egocentric indexes involve schematic elements, the application of such elements in particular contexts (hence the representational content that includes both schematic element and its application) cannot schematically range over any of various entities, and hence cannot be schematically general.

Egocentric indexes are special cases that are not subject to the second thesis, but I want to keep them in view, since their singular reference is restricted in ways that are at least broadly analogous to the ways attributives restrict applications guided by perception.

I am interested in attributive guidance in singular, context-bound, perceptually based *reference*. What do the four types of generality have to do with *attribution*? I believe that the notions of generality can be used to sharpen understanding of the sort of attribution necessary in guiding singular, context-bound perceptually based reference.

All attributives are syntactically general. Their form reflects their function. Their function is partly to be veridical of (perceptually accurate of, or propositionally true of) entities to which they attribute kinds, properties, or relations. Not all attributives are semantically general or ability general. Is a unique smallest prime is attributive but semantically singular. Killed that person (application included) is attributive but not ability general. Noncomplex attributive psychological representational contents *may*, however, always be ability general.

Be that as it may, the specific sort of attributive that I believe is necessary to guide singular, context-bound, perceptually based reference is nonschematic, ability general, and semantically general. That is the

_____

linguistic expressions of perceptually guided thought, commonly the expression "such" is used to evoke a perceptual attributive or a concept containing or grounded in a perceptual attributive. Since such attributives are commonly not precisely expressed in language, "such" is used to evoke them rather than express them.

main thrust of the second thesis. I will argue for this claim later in this
section. For now, I will make a few intuitive remarks about it.

The guiding attributives are nonschematic: They mark a general rep-
resentational ability to place restrictions on applications in a way that is
independent of the context of the applications. They do not by their form
require a completing application to have a definite referent or satisfier in a
perception or complete thought. The satisfiers of the guiding attributive
are fixed by the representational content of the attributive. That is how
the attributive restricts the context-bound singular reference. More
centrally, to purport to represent a particular in a context-bound percep-
tually based way, one must represent the particular as an instance of a
type. Schematic representations in themselves do not do this.

The relevant guiding attributive can, of course, be *contained* in a
complex schematic representation. Its contribution to guidance of con-
text-bound singular reference is a purported context-independent restric-
tion of the type of entity that can be a referent. Recall that I in effect
defined a *not-purely-schematic* representation as a schematic representa-
tion that *contains* a nonschematic representation. Syntactic containment
is clear in the case of explicitly complex representations (that sofa). But
there are more implicit cases. Most demonstrative pronouns and most
indexicals seem to contain some schematic/nonschematic mixture. Thus
she is restricted to females. Now and there are restricted to times and
places, respectively. We is restricted to persons, or at least beings with
psychologies. Today is restricted to days. I believe that these restrictions
derive from nonschematic representational contents that are contained
within the schematic ones. Thus I believe that applications of today in
particular contexts can be *guided* by a semantically general, ability gen-
eral, nonschematic attributive day.[22]

There seems to be some analog between such restricting elements in
ordinary indexicals and restricting elements (like ego or place) in *de se* or
egocentric markers. But there also seems to be a significant difference
between ordinary indexicals in thought and language, even framework-
marking conceptual indexicals like here or now, and *de se* markers in
perception and thought. Guidance by the nonschematic restricting con-
cepts contained in the conceptual indexicals and ordinary demonstratives
in thought seems to have a significantly different role from that of the
nonschematic restricting elements in *de se* markers. Guidance by non-
schematic perceptual elements that restrict the objects of perception also
seems different from the restriction contained in *de se* markers in percep-
tion. It is not that there is less restriction. The difference lies in the role or
type of the restriction. Although a semantical restriction goes on in *de se*

---

22. It seems to me important that day and time guide in today and now, whereas near or
salient does not attributively guide applications of this (differentiated from that).

markers or egocentric indexes, I doubt that it should be assimilated to attributive *guidance*.

The restriction in the egocentric indexes channels through the role in the framework rather than through helping the application discriminate an instance of a type. One does not perceive or think about the entities (the self or the place) that are marked by *de se* markers or egocentric indexes. Neither perception nor thought "picks out" the parameters indicated in applications of these markers. There is no scope for illusion or error. Yet the semantics of representational content cannot dispense with such markers. Application of such markers is fundamental in establishing the origin for a thinker or perceiver for a representational framework. Such context-bound applications are not representational acts or representational events (e.g., perceptual events) that occur within the framework. Such occurrences are part of the contextual establishment of the framework itself. Even with *de se* markers or egocentric indexes in perception, there are, however, semantically general, ability general, nonschematic restricters. It is just that the role of the restriction seems sufficiently different that I would like to highlight such markers as special cases in the second thesis. I leave fuller discussion of them to another occasion.

The guiding attributives are not only <u>nonschematic</u>. They are also <u>ability general</u> and <u>semantically general</u>. The requirement of ability generality derives from the idea that the singular representation can purport to refer only if it flows from a general ability to represent entities of the type.[23] The requirement of semantical generality derives from the idea that purported context-bound reference to a particular must be purported reference to an instance of a type.

The notions <u>nonschematic</u>, <u>ability general</u>, and <u>semantically general</u> restrict what it is to attribute a type in a way that can guide a singular, context-bound, perceptually based representation—a perceptually guided application.[24]

Here we have a very substantial approximation to the full second thesis: Laying aside egocentric indexing elements, a perceptually based context-bound semantically singular representational content must, in order <u>even to purport to refer</u>, be guided by a nonschematic, ability

necessary conditions on perceptually based reference

---

23. The notions <u>nonschematic</u> and <u>ability general</u> help articulate an intuition that representation in perception and in perceptual thought is, in a minimal way, *objective*. The relevant objectivity concerns independence of perspective from a particular context and from particular token acts or events. It is a kind of objectivity that is associated with (relative) nonparochiality of perspective.

24. Being nonschematic, semantically general, and ability general does not suffice for being attributive. Complete general plural constructions like <u>all the dogs ever</u> meet these conditions, but are not attributive. It is at best unilluminating to claim that being semantically general is necessary for being an attributive representation. If <u>is identical with 3</u> is not attributive, much further explanation is needed. Being nonschematic is also not necessary

general, semantically general attributive. The attributive must be non-schematic to be sufficiently substantive to restrict the reference. It must be ability general if the referential application is to be the exercise of an ability to represent instances of types. It must be semantically general in order to purport to represent a particular as an instance of a type. These claims are very rough. They are meant to be intuitive, not probative. Argument will follow.

useful explanation of features of reference

Perception and Thought: Association

At the beginning of this section I indicated that the *main idea* of the second thesis is that singular context-bound perceptually based purported reference must be guided by a general attributive representational content. I have been sharpening the relevant notions of guidance and attribution.

The full second thesis is more complex than its main idea. Much of the complexity concerns relations between perception and thought. I think that the ways that context-bound singular representation can be guided by general representation are more varied for thought than for perception. Many of the details of formulation are more conjectural than the main idea. If one wanted to avoid the details, one could skim or skip this subsection, and return to the argument that I give for a restricted version of the second thesis—a version that specifically concerns perception.[25]

The complication regarding the relation between perception and thought hinges on different ways that a guiding attributive can be *associated* with the context-bound singular representation. Discussion of association is in effect discussion of various forms of guidance. What is packed into supposing that each context-bound singular representation must be *associated with* some guiding nonschematic, semantically general, ability general representation?

accompaniment

A simple case of association is a demonstrative in thought accompanied by a perceptual concept or some sortal. A semantically general representation *accompanies* a context-bound singular representation if (a) the singular and general representations are contained in a single complex representation and (b) according to the representational content of the complex representation, the referent of the singular representation is a satisfier of the general representation.

Containment is a logical-grammatical notion. Psychological states are partly type-identified in terms of their representational content. Their representational content has a certain logical or grammatical organization determined by the ways abilities type-identified by the different elements

to being an attributive representation. Person from her city (unapplied) is schematic but attributive. The notions ability generality, nonschematic, and semantically general are intended to sharpen the *sort* of attribution involved in guiding singular reference. I take the notion attributive to be fundamental and primitive.

25. The term "accompanies," about to be explained, does occur in the argument.

of representational content interconnect psychologically. In an occurrence of the thought that pigeon sees the kernel, the singular element that consists in the context-bound application of that is accompanied by the semantically general representation pigeon. Pigeon is contained in the representational content that pigeon (and, more generally, in the thought), inasmuch as the logical form of the thought helps mark how essentially separable psychological abilities (the one associated with the schematic that and the one associated with pigeon) are related in the complex representational content of a thought. In this case, the logical-grammatical relation of containment also marks a relation between the semantical roles of the two components. The complex that pigeon is fully successful semantically only if in application of it, there is a unique referent of that that is a pigeon. Accompaniment is a relatively strong form of association.

Accompaniment and association are relations not only in thought but also in perception. I believe that every *perceptual representation* must either be, or be accompanied by, or contain, some nonschematic, semantically general, ability general perceptual attributive. (I believe that all noncomplex perceptual attributives are nonschematic, semantically general, and ability general.) Perceptual representations commonly contain a multitude of such general representations. In a visual perception as of a body, one part represents the body's left side; another part represents the center of the body's front surface; another aspect of the percept represents the color at a certain place on the body's surface. All these semantically general representations are *contained* in a larger topological perceptual representation. The larger perceptual representation also contains context-bound singular elements that are *accompanied by* contained semantically general elements. What this (partly) means is that psychologically speaking, the exercise of the singular perceptual application (the application of that) and the exercise of a general perceptual ability (the exercise of the ability marked by side) occur together and are mutually dependent. The "grammatical" accompaniment also marks ways that a psychological system transforms perceptual content either in the formation of new perceptions in response to stimuli or in perceptual memory or perceptual expectation. I think that every context-bound singular element in a perceptual representation—other than framework-indexing elements—must be *accompanied* by some nonschematic, semantically general, ability general perceptual attributive(s).

Constraints on associations between singular, application *thought components* and general representations are looser than those on perceptual representations. Not every context-bound singular element of a thought must be *accompanied by* a semantically general *concept*.

An application of a demonstrative can be associated with general representations by being tied pronomially to concepts in other thoughts by the person. Application of a demonstrative in one thought may be thus guided by concepts in other thoughts. One could think thoughts

that have file-like or anaphoric memory connections back to singular elements in other thoughts. The guiding representations may be present only in the other thoughts. The thinker must, in these cases, be capable of making a relatively immediate connection between the application of the singular representation and an application of the guiding concept.

A singular demonstrative-like element in thought could perhaps be associated with, and be guided only by, a general perceptual or perceptual-memory attributive rather than a conceptual predicative attributive. An individual could perhaps think thoughts containing singular, referential elements guided by perceptual types, but no specific concept. Suppose that one had an unconscious perception of an object but had not conceptualized it. One could perhaps essay a demonstrative reference in thought guided by the perceptual type. The individual might not have conceptualized *in thought* what sort of object it is, how it is sensed, or even in what direction it is. Then no such representational material is available to the individual's *propositional* inferences. The individual might still be able to say, when presented with candidate objects, "that's not it," "that's it." In so doing, the individual might be going on some unconscious perceptual way of tracking it.[26]

To say that an autonomously applied, context-bound singular representation must be *associated with* a general representation is to say that one of the following conditions holds: (1) The singular representation is perceptual and is accompanied by a perceptual attributive. Or (2) the singular representation is a component of a representational thought content; and (a) it is accompanied by a general conceptual attributive; or (b) it is anaphorically connected in memory or reasoning to singular representations in other thoughts by the same thinker that are so accompanied (as in (a)); or (c) it is anaphorically tied to and guided by a perceptual attributive in the same thinker. In all these cases, the second thesis holds that the singular representation must be associated with a nonschematic, ability general, semantically general attributive, somewhere in the thinker's point of view, that *guides*. The association with a guiding representation is necessary even if (as in cases (2b) and (2c)) the associated general representation does not accompany the singular representation.

Recall that the main idea of the second thesis is that purported, singular, context-bound, perceptually based reference must be guided by attributive, general representations which type-identify types of

---

26. If the individual just has a feeling that an object is present but *lacks* any perceptual representation, however unconscious, of any aspect of it, then he cannot think a demonstrative thought about a definite object in this context. The example that I have been discussing came from conversation with Calvin Normore. I place no great weight on the idea that an individual might think demonstrative thoughts guided only by perceptual representations. I sketch it mainly to give a sense of a space of putative possibilities.

particulars referred to. The first thesis holds that all representation is perspectival, representation-as.

The second thesis presupposes the first, but makes a more detailed claim. Fully stated:

> *Laying aside egocentric indexing elements, each context-bound (ability-particular), semantically singular, syntactically singular, perceptually based representational element in every autonomous propositional thought, and in every perception, perceptual memory, perceptually guided actional state, and perceptually grounded intermodal state must be associated with a nonschematic attributive that is ability general and semantically general, and that guides the singular representation.*[27]

"*Autonomous*" is meant to rule out thought that leans essentially on communication for its reference. I shall discuss this qualification in section III.

I want now to give an argument that explains why singular elements *in perception* must be accompanied by and guided by general elements—nonschematic, ability general, semantically general, attributive representations. Perceptually based singular representations in thought and perceptual memory depend on such elements in perception and carry analogous requirements.

Argument for a Restricted Version of the Second Thesis

In this subsection I propose an argument for a restricted version of the second thesis. The argument is restricted to the thesis as applied to *perceptual* context-bound, semantically singular representation (excluding *de se* framework markers). Perceptual representation is trivially perceptually based. It occurs in a perception. The argument derives from considering fundamental aspects of perception and perceptual explanation. I think that the argument can be expanded to apply to perceptually based thought. I shall not do that here.

---

27. As noted earlier, I think representational contents like God and three are individual concepts, the conceptual counterparts of individual constants. They are ability general but semantically singular. Unlike ordinary proper names, they are not associated with demonstrative-like determiners. Cf. "Reference and Proper Names." I believe that the second thesis can be modified and extended to apply to individual concepts. I think that these concepts also cannot be thought autonomously unless they are associated with and guided by semantically general, predicational concepts. Thus in autonomously thinking the concept three, one must be disposed to think such things as that three is a number, or three is the number immediately following two. *Or* one must associate the individual concept with attributive uses accompanying and guided by sortals: there are three Beethoven string trios. Autonomous use of the concept God or Tlaloc presupposes general attributions, such as deity, agency, god of rain. I believe that individual concepts require some nonschematic, semantically general, attributive conceptual associations to enable them to be context-free. Expanding the argument (which follows) for the second thesis to cover such cases would, however, be nontrivial.

Restricted 2nd Thesis. *Any perceptual, context-bound, semantically singular representation that is not an application in an egocentric indexing element must be accompanied by and guided by a nonschematic, attributive, ability general, semantically general representation.*

I begin, in the two paragraphs that follow, with some background observations about perceptual ability. Then for an arbitrary perceptual, context-bound, semantically singular perceptual representation S that is not an egocentric marker, I argue that there must be a further representation G that has each of the features that the Restricted 2nd Thesis requires.

To be, or to be part of, an exercise of a perceptual *ability*, an occurrence of a context-bound singular element S in a perceptual content must be part of an instantiation of a *general pattern* of perceptual response. The response is triggered by proximal stimulation. It is fundamental to perception, and psychological explanation of perception, that given the perceptual abilities and antecedent psychological setting of the psychological system (type-identified partly in terms of general patterns of relations to usually distal, environmental stimuli), any given type of proximal stimulation would produce the same general pattern of perceptual response.[28] In cases of successful perception, the response discriminates entities that are environmental causes. The general pattern of response in which singular element S is embedded must be repeatable if it is to be part of an exercise of a perceptual ability, and if it is to be a perceptual response that is the basis for explanation.

To mark a *perceptual* ability, and to be explainable as a *perceptual* response, the general pattern must be type-identified so as to allow for evaluations of veridicality or referential success. It must be type-identified in terms of *representation* (representational content). Call this representation or complex of representations that type-identifies a *general* pattern of perceptual response "G."

Individuals perceive particulars through their perceptual systems by representing natural aspects of those particulars. There is no other way. One cannot perceive Mama except by representing some of her natural characteristics. The general pattern of perceptual response functions fallibly to discriminate particulars by way of natural aspects of those particulars. The natural aspects can be represented similarly by any appropriately equipped perceiver on a different occasion. So the relevant general pattern is *freely repeatable*: There is no particular *occurrent* stimulation, proximal or distal, that is essential to its nature. Since it is freely repeatable, the representational content that marks it is *ability general*.

A second line of reasoning leads to the same conclusion. The general pattern instantiated in any given perceptual response is explainable as a type of response produced by a type (or range of types) of stimulus, given

---

28. This is an approximate formulation of the Proximality Principle. Cf. "Disjunctivism and Perceptual Psychology."

antecedent and cooperating psychological settings. In successful cases, the response is explainable as deriving from a type of environmental *representatum*. It must be so explainable if perception is to be subject to general explanatory principles. The representational identity of the perceptual response-type depends on the types of stimuli that produce it. So the ability that the response-type constitutes is freely repeatable. So G is *ability general.*

The ability generality of G is thus both grounded in the nature of a perceptual ability and signaled by the methods of explanation in perceptual psychology. I have given two arguments for the ability generality of G. The first goes from the (fallible) function of perception in representing particulars by representing natural properties to the nature of the perceptual abilities (viz., freely repeatable) and the nature of the representations that mark those abilities (viz., ability general). The second argument centers on the nature of the explanation of perception. The second argument is from a weaker premise. It simply notes that explanations of perception take (I think *must* take) as a fundamental assumption that the perceptual response, whatever its function, is a response to stimuli of certain types. There are no specific *particular* occurrent stimuli or responses that the response is individuated in terms of. This is part of what it is to be a natural response.[29]

Since the pattern of response is freely repeatable and not essentially or necessarily causally linked to any particular token stimulation—proximal or distal—but only to any stimulation of a range of types, and since the reference and veridicality of perceptual representations that type-individuate perceptual ability depend on environmental causal relations with the subject matter, G is *semantically general.* If G can represent or be veridical of a given particular, it could represent or be veridical of any other particular of the same type, as far as G's form and content are concerned. Such form and content apply to any of various instances of properties or relations, or to any of various particulars of a kind.

The relevant type of successful application of G is veridicality-of, not reference. The function of perception is to discriminate particulars that the perceiver interacts with. Discrimination must be by way of general perceptual abilities. These abilities are repeatable, but they are of perceptual relevance only insofar as they enable the perceiver to discriminate particulars. So the abilities respond to repeatable patterns in helping to discriminate particulars. The form of the representational contents that help type-identify these abilities is determined by the abilities' function. So the form of the semantically general representation G (or component of G) that marks the system's capacity to discriminate context-independent aspects of the environment is *attributive* rather than referential. G's

---

29. The stronger premise of the first argument will be reused in the argument that G is nonschematic. The premise of the second argument is not strong enough to show that G is nonschematic. It suffices, however, to show that G is ability general.

role is to help perception—representations like S in perception—represent particulars as being of certain types or as having certain repeatable aspects.[30]

4. argument that G *accompanies* S — Again, I argue from function to content. Perception cannot represent general properties "in the abstract." Semantically general representations in perception can occur only in tandem with singular representations. Perception functions (fallibly) to represent particulars via those aspects of them that it can discriminate in the context. This pattern of interdependence is marked in the "syntactical" or "grammatical" organization of perceptual representation, which treats singular and general representations as contained in a unit representation. The complex representation fulfills its function if the referent of the singular representation satisfies the general representation. So the general representation or representations G *accompanies or accompany* the singular representation S. (We could take the representations to be a subset of G. But I think that the argument is not compromised if we identify them with G.)

5. argument that G is non-schematic — Since perceptual explanation appeals to G along with S in explaining instances of perception, G must be relevant to explaining the perceptual system's purported discrimination of what S purportedly refers to by way of purportedly discriminating aspects of that referent. A similar point derives not from the nature of explanation but from the nature of perception. The nature of perception requires that G type-identify an ability to respond to such discriminable aspects of the environment. Purely schematic representations do not mark a response to any specific type of stimulation or to any specific aspects of the environment. They cannot mark what is specific to the perceptual system's discriminative response. If S were backed purely by a demonstrative ability marked only **indeterminacy argument** by this, the ability would not be a specific discriminative response to any of the numerous proximal and distal particulars, or types of particulars, in any given causal chain from the environment to the sensory receptors. Such a this would not mark an ability that was specific to the perceived environmental particular, even in the context. For the this would mark an ability that was equally (un)specific to the array of proximal stimulation, the perceived entity, the entity's surface, any of its various properties, the stimulus patterns at any of various distances between the perceived entity and the perceptual system, and so on. G must mark an ability that is both

---

30. I take it that the notion of attribution derives from Aristotle's notion saying of. Here we are not discussing saying. We are discussing any sort of mental state, event, or act, with the form and function of connecting particulars to general types (attributively!). I believe that the same idea, confined to a perception-like case, is present in Kant's notion of a predicate of intuition, *Critique of Pure Reason*, B278. In my terminology, predicates are *conceptual* attributives, but I think the difference from Kant is only terminological. He recognizes a distinction between perceptual attributives ("predicates of intuition") and conceptual attributives ("predicates of judgment").

specific and repeatable. It must specify some purported aspect of the perceived entity. So G is not purely schematic. Only restrictive, nonschematic aspects of impure schematic representations are relevant to marking the perceptual system's capacity to discriminate particulars by way of their aspects. Only they mark capacities to respond to and discriminate recurring, non-context-specific aspects of the environment. So either G or a component of G must be *nonschematic*.

Thus any demonstrative in perception must be accompanied, in purporting to secure its referent, by a nonschematic qualifier. This (as applied), or even this is G (as applied) is not a possible form for perceptual representational content. Only this G (as applied) will do as a purportedly referring perceptual content. no pure demonstrative reference

Since individuals' perception and their perceptual systems function to pick out particulars through singular representations and accompanying general representations, and since the general representation G has no other perceptual function than to apply to particulars so picked out, G, or a component of G that meets the conditions discussed above, is for the perceptual system an important means of helping to pick out the particular. Given our *official* explication of guidance, it follows that G (or a relevant component of G) *guides* the singular representation S.

But our supplementary remarks about guidance went further. I stated that guidance was by way of some sort of explanatorily significant typing. I maintained that certain types of not-purely-schematic attribution are insufficient. On the other hand, I left open exactly what would count as an explanatorily significant typing of a particular. Can more be said here?

Let us consider the matter intuitively. Insofar as perception is, purportedly or actually, of an instance of a property or relation (a color or a spatial relation, for example), it seems necessary in producing the relevant typing of instances that some property in the same range be attributed. So one could (purportedly or actually) perceive an instance of red *purely* as red or as orange, but not *purely* as flat, or as an edge, or as a smell. What funds this intuition?

A perceptual system, or a perceiver, must have abilities to discriminate particulars by way of types that the particular instantiates. The system, or perceiver, must be able to discriminate those types. I believe that *the key underlying principle that informs the search for guiding types* is as follows: The ability to discriminate a particular must be marked by some ability general attributive representation that under certain normal, standard-making, conditions would be successful in helping the perceptual system discriminate the perceived particular from discernible particulars of other types that are in the same environment. Moreover, this success must ground explanation of the nature of the perceptual state and its representational content through explanation of the relevance of perception to the individual's basic activities. (I take this last condition to be assumed in what follows.)

Of course, since shapes are of different colors and colors commonly color a wide range of shapes, neither attributive type would be a good general

guide for finding instances of the other. But even if shapes and colors correlated more closely than they do, an attribution of a shape alone could not be a means of perceptually discriminating a color—because shapes and colors are both in the environment. So an ability general attribution of shape could not by itself discriminate an instance of a color from an instance of a shape. Attribution of shape would not in normal conditions of successful perception suffice to discriminate an instance of a color from various shapes that are equally in the environment.

It is perhaps less evident what to say about perceptual kind-typing of individuals, such as bodies and events. Following our conjectured principle: The perceptual system must attribute kinds that under the normal content-determining conditions would be successful in discriminating the perceived particular from particulars (including concrete individuals) of other kinds in the same environment. Perceptual representation as of bodies must discriminate them, in normal conditions, from events, color instances, and shape instances—because these kinds of particulars are distinct and occur in the same environment.

Of course, one cannot perceptually discriminate bodies apart from *any* aspects of them. There is no perceptually discriminable kind <u>body</u> that is perceptually identifiable independently of some aspects of bodies. Traditionally, certain sorts of trackable shape and perhaps solidity or resistance to touch have been regarded as the key aspects. This is a complex matter that I will not try to unravel here. I want to make a few more remarks, however.

<div style="color:red">distinguishing bodies from features</div>

I think that some generic type of volume that is discriminable from the background and stable enough to track is the key feature that triggers perceptual categorization of something as a body. But any instance of the generic shape or volume type—such as being coherent, relatively rigid, three-dimensional, and largely bounded—that is a mark of perceptible bodies must somehow be distinguished from the object itself. Inevitably, for any generic three-dimensional shape that correlates with bodies, the shape and body cannot be perceptually discriminated in a given case.

I think that the distinction lies in the function that the body representation has in the representational and practical economy of the perceiver. A perceptual representation of a particular as a body, as opposed to a generic shape that is the perceptual mark of a body, has certain representational functions in unifying or binding representations of various sorts—shape representations, color representations. Moreover, it is a necessary aspect of the ability to discriminate bodies (and only a contingent aspect of the ability to discriminate the relevant shapes that one uses to discriminate bodies) that the perceived particular be trackable over time. A body representation is also essentially connected to practical functions such as eating, mating, fleeing, and avoiding collisions, in ways that the shape representation is not.

<div style="color:red">solving a binding problem</div>

The association of these functions with perception can ground explanations that take both guiding body representations and whatever (also

commonly, guiding) generic shape representations on which guiding body representations are necessarily parasitic, to coexist in a perceptual system, and yet to be distinct. It is necessary to the body representation but not the shape representation that its application be associated with an ability to track the particular instance (of body), bind it with other property-representations, and connect it immediately with certain practical functions.[31] But the body representation is representationally (though not necessarily temporarily) posterior to the generic shape representation. In the order of explanation of the formation of representations in a perceptual system, the shape representation must come first. I reject the view that conceptual representations in propositional attitudes must supplement perceptual representations for the distinction to have empirical application. This is a complex matter, not to be argued here.

attributions & explanatory grounds

This line of reflection suggests that guidance is in terms of typing attributions that provide an explanatory ground for distinguishing successful perception of particulars of a given kind from perception of particulars of other kinds that are also present in the environment. The ground may lie only in perceptual discrimination. Or it may also involve further functional differences in the abilities marked by the representations. A full account of typing attribution must attend to empirical detail.

I have argued that any perceptual, context-bound, semantically singular representation that is not an egocentric indexing element must be accompanied by and guided by a nonschematic, attributive, ability general, semantically general representation.[32] The argument is meant not only to support but to clarify this conclusion.

Two Brief Comments and Three Groups of Remarks on the Second Thesis

I will make two brief, retrospective comments on the second thesis, followed by three more extensive observations about it.

First, I do not count the widest category, object or entity, as sufficient to guide singular elements in perception. The perceptual system could not have a representation that purports to apply to numbers or thought events as well as physical entities. The point of the general element in perceptual representation is to characterize what it is about the purportedly perceived particular that makes it perceptually discriminable from other particulars in the environment. The most generic categories lack such a function.

---

31. Cf. Anne Treisman, "Feature Binding, Attention, and Object Perception," in *Attention, Space, and Action*, ed. G. W. Humphreys, J. Duncan, and A. Treisman (Oxford: Oxford University Press, 1999).

32. The requirement of accompaniment holds only for perceptually based representation. The second thesis relaxes this requirement for thought in general.

Second, I do not require that the general representation be conscious. Many of the primitive representational aspects of perception are preconscious.

Now to the *first of the three more general groups of remarks*. The second thesis is incompatible with holding that a perceptual context-bound singular representation can fail to be guided by a nonschematic general representation. For example, a sensation *per se* or a neural disturbance *per se* does not suffice to recruit a singular perceptual demonstrative.[33]

It is, of course, an empirical matter whether any given system is a perceptual system. What rules out sensations and neural disturbances as kinds fully adequate to the task of marking psychological aspects of singular *perceptual* representation of entities in the physical environment is their lack of referential specificity. The point emerges from considering what psychological representations must be in place in the perceptual system's response if perceptual discriminative abilities that are marked by

33. In some of his articles on multiple object tracking, Zenon Pylyshyn skates very close to the view that I am arguing is incoherent. Often Pylyshyn seems only to be claiming that the reference of the demonstrative indexes is not determined by coding properties of objects that distinguish them from other objects in the scene. (All of the dot-like entities look the same.) But he sometimes suggests that visual indexes are recruited without being associated with an encoding of *any* properties of the objects that they track. Sometimes visual indexes are said to be preconceptual and to pick out "visual objects" that are "proto-objects." It is unclear to me whether Pylyshyn intends "preconceptual" to amount to "preperceptual" (in my sense). Some of what he writes suggests that he does. On this view, the visual indexes start as no more than sensory registrations. Sometimes it is suggested that the visual indexes do not genuinely refer. They would thus not count as "objective" or as perceptual in my sense, and the theory would not be contradicted by the second or third thesis. (For a general sketch of my conception of the *perceptual*, see my "Perception," *International Journal of Psychoanalysis* 84 (2003): 157–167.) I find Pylyshyn's discussions of visual objects, like most such discussions in the vision literature, unclear. By the stage at which visual indexes are involved in *perceptual* tracking, I believe that they must be associated with representation of at least primitive properties. Some of Pylyshyn's actual discussion of the indexes in experiments treats them as picking out objective entities. The moving objects on a computer screen clearly *model* physical objects. I believe that the objects on the screen are fully objective, and that there are, at this point in perceptual processing, genuine perceptual, context-bound singular representations. Construed in this way, Pylyshyn's apparent claims that no properties are encoded when visual indexes are used seem to me clearly mistaken. Indexes in genuinely *perceptual* tracking initially pick out objects not only by way of spatio-temporal position but also in terms of some sort of minimal, approximate boundedness or integrity of the form of the objects—some way of distinguishing figure from ground. They are visually discriminated from their backgrounds by some generic, approximately closed geometrical forms, though under time pressure not by their specific shapes. This is true, I believe, even if something like a visual index is initially recruited by a reflexive nonperceptual registration of simply a sudden onset of proximal stimulation. Although shape, color, and kind are sometimes not tracked when objects are tracked, if the indexes pick out genuinely *perceived* objects, they must (and do) carry minimum coding of a perceivable type, however generic, that distinguishes figure from ground. Cf. Zenon Pylyshyn, "Connecting Vision with the World: Tracking the Missing Link," *The Foundations of Cognitive Science*,

those representations are to be explained.[34] Such explanation must explain responses to stimulations by attributing perceptual competencies to get things right. Full explanations purely in sensational or neural terms do not appear viable. Such terms are representationally too unspecific. Sensations and neural disturbances cannot in themselves supplement applications of singular perceptual demonstratives to explain perceptual ability, perceptual reference and veridicality, or perceptual error.[35]

The lack of referential specificity of purely schematic or purely singular representations forces guidance by nonschematic, semantically general representations. The requirement underlies the fact that perception—both singular and general perceptual representation—has conditions for success in objective reference and veridicality.

The point of explanations in perceptual psychology is to explain how the perceptual system represents particulars and aspects of the environment—and ultimately how it enables the individual to perceive what he, she, or it does perceive—under various types of stimulation.

Any perceived particular is of given types and has given properties. Other particulars with other properties are present in the causal chain that triggers the singular representation. In fact, for any pattern of causal relation between a perceived particular and a perceptual response that succeeds in representing the particular, there are many kinds of particulars that are necessary parts of this pattern but are not perceptually represented. For vision, there are events on the object's surface, light waves in the space between the perceptual system and the particular, chemical changes on the eyeball and retina, events in the optic nerve. Each of these events is part of a pattern of events, any instance of which

---

J. Branquinho ed. (Oxford: Clarendon Press, 2001)); Pylyshyn, "Situating Vision in the World," *Trends in Cognitive Sciences* 4 (2000): 197–205; Pylyshyn, "Visual Indexes, Preconceptual Objects, and Situated Vision," *Cognition* 50 (2001): 127–158.

34. It is empirically possible for perceptual psychology to have no application. The argument is meant to show that given that perceptual psychology does have application, there are features its explanation must have, by virtue of being perceptual. I take it that the relevant notion <u>perceptual</u> does not simply stipulate these truths. What the argument rules out is singular reference in perception without its being by way of repeatable capacities to discriminate (and represent) aspects of particulars that render them perceivable by the perceptual system. I believe that this is an apriori element in perceptual explanation. Excepting occasional conceptual confusion that is inessential to empirically supported findings about perception, empirical explanations in perceptual psychology accord with these points.

35. In principle, I allow for ontological identification of representational perceptual states with sensations or neural states. In principle, I allow for explanatory reduction. Any such reduction would have to explain what representational explanations of perceptual states explain, and thus accord with the second thesis. I am *very sceptical* of such reduction. I do think that perceptual representational states commonly have sensations (conscious or not) as elements, but I take it that *in themselves* sensations do not have any specific representational content.

would produce the same type of sensation or same type of neural dis-
turbance in the brain. Any instance would be equally explanatorily
related to an application of a purely schematic perceptual representation
(analogous to that, unapplied). To explain what aspects of the particular
are purportedly perceived, one must explain the system's response in
terms of representational kinds of abilities that are specific to those
aspects. Kinds of sensations or neural events *per se* can play a role in
explaining nonperceptual, sensory responses to the environment. They
obviously play some role even in the full explanation and understanding
of perception. But they do not mark acts or abilities that are specific
enough to be the perceptual system's ability to refer to (perceive) any
definite perceivable entity. The empirical and conceptual bases for the
difference between perceptual and mere sensory response is a topic for
another occasion.

So to explain a purported (fallibly functioning) *perceptual* context-
bound singular representation, perceptual psychology must relate the
perceptual response to discriminable aspects of particulars. The percep-
tual response must be marked as a capacity to represent those aspects.
The representational ability is type-identified in terms of aspects of
particulars that the system interacts with in successful (veridical) percep-
tions. Such aspects will help type-identify nonschematic, semantically
general, ability general representational kinds that mark conditions of
veridicality.

The *second group of remarks on the second thesis* concerns not the
general guiding element in perception but the singular element. Repre-
sentational contents of perceptions and propositional attitudes mark both
individuals' perspectival abilities, or exercises of abilities, and the condi-
tions under which the representational function of the perception or
attitude is fulfilled. In the exercise of their fallible perceptual abilities,
individuals perceive particulars as having general features. The function
of perception is to perceive particulars—particular instances of color,
shape, or trajectory, particular objects or events—as well as to get their
general features right. Fulfillment of this twofold function is veridicality.
Perceptions—both the states and the contents that mark them—are
veridical when representationally successful. The specification of repre-
sentational content of a perception should specify a condition that when
fulfilled is veridical, not merely veridical-of. It should also specify a
content that refers to the particulars perceived. So in specifying the
representational content of a perceptual state, one must specify both
some element that, when successful, picks out a particular and some
element that, when successful, attributes a general feature to that par-
ticular.

There are duplicates that would be indiscernible to a perceiver, but
where only one of the duplicates is perceived—because it is the one
causally responsible for the perceptual state-token, the exercise of the
perceptual ability. Or the two might be perceived successfully and

second group
of remarks

successively, without the perceiver's discriminating the two. <mark>Something in the exercise of the perceptual ability must be specific to the particular that is actually perceived. There is no freely repeatable perceptual capacity that distinguishes one particular from another.</mark> So a context-bound (ability-particular) element in the exercise of the perceptual ability must be marked in the representational content of the perception. The singular elements are context-bound applications that mark, or are individuated in terms of, actual token exercises of perceptual abilities.

The same train of reasoning applies to the specification of the representational contents of propositional attitudes. Representational contents of attitudes mark both perspectival abilities and exercises of abilities—modes of presentation in thought—and the conditions under which the representational function of the attitude is fulfilled. In the exercise of their mostly fallible propositional attitudes, individuals frequently think thoughts that are about particulars and attribute general features to them. Belief is fundamental to all propositional attitudes, in that all other attitudes are constitutively associated with a capacity for belief. The representational function of belief is to believe truths.

Fulfillment of this function is true belief. Thoughts, both the states and the representational contents that mark them, are true or false. The specification of representational content of a propositional attitude should specify a truth condition—a mostly fallible, partial perspective on a putative subject matter that when fulfilled is true, not merely true-of. Equally, such specification should specify a representational element that indicates the particular that the belief is about. So in specifying a representational content of a propositional attitude that is purportedly about a particular, one must specify both an element that, when successful, picks out a particular and an element that, when successful, attributes a general feature to that particular.[36]

Parallel considerations to those sketched above about duplicates (or simply considerations about particulars thought about) that cannot be discerned by the individual through freely repeatable abilities demand recognition of singular elements that are context-bound or ability-particular. These elements are applications in thought. Such applications are individuated ultimately in terms of context-bound actual exercises of ability general, syntactically singular, demonstrative and indexical propositional abilities. Specification of such applications is part of the specification of the truth conditions that representational contents of thoughts constitute.

duplicates & perceptual particularity

The point that representational contents of propositional attitudes are true or false, not merely true-of or false-of particulars, is further supported by the fact that the representational contents of empirical propositional attitudes are parasitic on the representational contents of perceptions. The

36. For a discussion of representational function, see my "Perceptual Entitlement," section I.

former are individuated partly in terms of the latter. The argument that perception is perspectival and yet picks out particulars seems to me especially evident because of the relative concreteness of our conception of the perspectival and particular-representing nature perception. So the argument regarding perception can be seen as supplementing and to some extent underlying the argument regarding propositional attitudes.

gappy until filled propositions   It is hard to overemphasize the significance of these points in evaluating theories of propositional attitudes. Some neo-Russellian accounts, originally developed to account for linguistic meaning, rest satisfied with a propositional "content" that is not fully representational. They incorporate particulars as constituents in the "proposition" that is thought. Such particulars normally do not represent. Physical particulars untouched by minds do not represent. They do not represent themselves or anything else. I find such "propositions" artificial, but otherwise innocuous. But I think that the foregoing considerations show that such approaches cannot provide a full account of perception or thought. A full specification of a perception or a propositional attitude must take it to represent and pick out particulars that it is about. An individual's psychological relation to every element that a psychological state is about is perspectival. The perspective on the particular includes the fallible occurrent *exercise* of an ability general, syntactically singular ability. The exercise is an application. Such exercises themselves are representational acts or events, and are marked by context-bound representations. Thoughts and perceptions are exercises of perspectival abilities that are true (false) or veridical (nonveridical)—not merely true-of or veridical-of particulars. The representational contents of perceptions are veridicality conditions that may or may not be fulfilled by particulars and their properties. The representational contents of thoughts are truth conditions that may or may not be fulfilled by the world.

These reflections on the second thesis supplement the import of the first thesis. Not only is every particular perceived and thought about perspectively. Every particular that is perceived or thought about is represented by elements that are specific to that particular. Such elements need not fully specify or describe the particular. The relevant elements are singular token-individuated representations that mark singular applications of some general representation. The singular application is guided by the general representation. It is specific to the particular not in specifying it, but in being an element in the perceiver or thinker's perspective that is an exercise of a representational ability and that is causally connected in an appropriate way to a particular in the context. Where perceptions and thoughts purport to be about particulars but fail to represent a particular, there is nevertheless a syntactically singular representational element that functions fallibly, and in the instance unsuccessfully, to pick out a particular. This element is of a sort that would have succeeded if its use had been more adept or if conditions had been more favorable.

third group of remarks

Let me turn to a *third group of remarks on the second thesis*. Most philosophers who have addressed these topics would accept the second thesis. Most such philosophers impose stronger though in some respects less precise requirements on guidance and attribution than it does. It is common to require that a capacity for perceptual (and perceptually based) singular reference be guided by a large range of conceptual abilities, abilities that are components of propositional attitudes. These have included ordinary sortal concepts; causal concepts; knowledge of one's place in space; veridical, attentive application of most of one's perceptual information in thought; self-conscious application of reasons; and so on. I regard all such requirements as hyper-intellectualized and empirically untenable.

against sortals

The second thesis does not require that perceptually based representation of particulars be guided by ordinary sortals. In the first place, perceived particulars may include instances of properties and relations, as well as objects and events. In the second, some perceptual reference to physical objects is guided only by rubrics like connected body.[37] In fact, the thesis does not require that perception be guided by any *concepts* at all—not sortals, not causal concepts, not concepts of oneself and one's place in space, not quantification or identity. It does not require that most information coming from the referent be veridical. I believe that most of the traditional accounts are mistaken in requiring that perception of physical objects be backed by concepts (components of propositional attitudes) or thought. They conflict with empirical facts about human and much animal vision. They also neglect objectifying elements in perception itself. In being less restrictive, the second thesis may fare better.[38]

What the thesis requires is modest but substantive. In requiring that perceptually based context-bound singular representation be guided by a nonschematic, general representational ability, the thesis maintains that perceptually based singular representation is grounded in abilities that are independent for their natures of any specific occasions. Perceptually based representation is fundamentally individuated in terms of repeatable kinds. It is embedded in repeatable patterns in the world.

37. For discussion of this generic representational category for physical objects or bodies, see Elizabeth Spelke, "Principles of Object Perception," *Cognitive Science* 14 (1990): 29–56; Fei Xu, "From Lot's Wife to a Pillar of Salt: Evidence That *Physical Object* Is a Sortal Concept," *Mind and Language* 12 (1997): 365–392 ; Fei Xu and Susan Carey, "Infants' Metaphysics: The Case of Numerical Identity," *Cognitive Psychology* 30 (1996): 111–153; P. W. Jusczyk, S. P. Johnson, E. S. Spelke, and L. J. Kennedy, "Synchronous Change and Perception of Object Unity: Evidence from Adults and Infants," *Cognition* 71 (1999): 257–288; Susan Carey and Fei Xu, "Infants' Knowledge of Objects: Beyond Object Files and Object Tracking," *Cognition* 8 (2001): 179–213.

38. I think that principles governing conditions under which singular application is possible that have been articulated by Quine, Davidson, Strawson, Evans, and others have clear counterexamples. I shall discuss these on other occasions, including a forthcoming book, *Origins of Objectivity*. Cf. my abstract "Perceptual Objectivity," *Kreativität*, XX Deutsche Kongress für Philosophie (September 26–30, 2005), ed. G. Apel (Hamburg: Felix Meiner, 2006), 484.

In requiring that singular perceptual representation be guided by a representational responsiveness to types, the thesis accords with the view that such representation is to be explained—including individuated in anti-individualist fashion—in terms of an ability to discriminate repeatable types (kinds, properties, relations) in the world. Many of these types are not "natural kinds" in the strictest, most universal sense, although perceptual kinds are founded in patterns of the natural world. Some are kinds (colors, for example) that only the representer's makeup will allow him to be sensitive to. At the level of thought, some types (pianos, for example) have a cultural basis. All have a repeatable character and an independence from particular representational events that makes general explanation of connection-with-the-world possible.

In requiring that singular perceptual representation be guided by semantically general attribution, the thesis attempts to capture the fact that the responsiveness to general types in the world functions primarily to enable representers to represent, and otherwise interact with, *particulars*. The particulars are discriminated only through their repeatable aspects. But the repeatable aspects are of representational significance only inasmuch as they are channels or guides to particulars. This is why at the ground level of perceptually based representation, the guiding representations are *attributive*. They are—when successfully applied—*veridical of* or *true of* particular instances, rather than simply names of types.

I have stated a fairly conservative thesis, and have argued for an even more restricted one. I believe that the second thesis (and the third) can be broadened beyond perceptually based, context-bound singular reference. A broader thesis could include certain sorts of reference to one's own psychological events and reference to mathematical entities (cf. note 27). I will discuss such cases in section V. But I will not specifically reformulate the second (or third) thesis to deal with them.

The second thesis does not require that the guiding representation be *veridical of* the referent (if any) of the singular representation. The thesis sets a condition on perception and all perceptually based thought that purports (functions fallibly) to refer to particulars. I turn now to necessary conditions on *successful*, perceptually based, context-bound singular representation.

III

All reference in perception or thought must occur within a topological perceptual structure, or a logical-inferential propositional structure, that type-identifies a network of representational abilities. These structures are fundamental to psychological explanation as well as to a reasonable epistemology.

The second thesis claimed that an aspect of such structures is a constitutive connection between perceptually based singular reference and attribution. The third thesis presupposes the second, but it makes a claim not about psychological structure and psychological ability but about conditions for successful reference. Intuitively, the key claim is that, in each case, successful perceptually based singular reference can occur only if some guiding attributive is *veridical of* or accurately characterizes the referent.

More specifically, the third thesis is:

the third thesis   *Laying aside applications of egocentric indexes, if an autonomously used, perceptually based, context-bound singular representation is to have a referent in perception, perceptual memory, perceptually guided actional state, perceptually grounded intermodal state, or propositional thought, the singular representation must be guided by some empirically committal, nonschematic, attributive, semantically general, ability general representation that is in fact veridical of the referent.*

The thesis maintains a minimum role for *veridical general representation* in determining successful reference by perceptually based singular representation.

Recall that a *perceptually based* representation is one that is or occurs in a perception, or that occurs in perceptual memory that purports to represent a previously perceived particular, or that occurs in a perceptually guided actional state, or intermodal non-propositional perceptually grounded state, or that is a thought or thought component that functions to represent a particular through perceptual resources.

empirical   To be *empirically committal* is for a representation to depend for its
commitment   content and the warrant for its application on perception. So is self-identical, is the result of adding 7 to 5, and is the result of adding 7 red squares and 5 red squares are not empirically committal. The thesis holds that for perceptually based, context-bound, singular reference to be successful, the singular element must be guided by an empirically committal general representation that is *veridical of* the referent.

Work by Kripke and Donnellan showed that uses of context-dependent singular terms can succeed in having a referent even if salient descriptions associated with them fail to be true of the referent. Both authors cited cases that are easily extrapolated to show that no explicitly applied linguistic predicate must be true of the referent.[39] One can refer to the man in the corner who pretends to drink what is in fact a martini even if one thinks of him as the woman along the wall drinking a soda. One can

39. Saul Kripke, *Naming and Necessity* (Cambridge, Mass.: Harvard University Press, 1972); Keith Donnellan, "Reference and Definite Descriptions," *Philosophical Review* 75 (1966): 281–304; Donnellan, "Proper Names and Identifying Descriptions," *Synthese* 21 (1970): 335–358. Regarding extrapolation, I have in mind Donnellan's case involving the child in his 1970 paper and Kripke's Jonah case.

refer to Socrates even though one calls him "Hebrides" and is mistaken about what he is known for.

A similar phenomenon occurs in perception, independently of language. One can see a white sphere behind one—where one's sight is guided by a prism one is unaware of—even if one perceives it as a brown animal in front of one.

Such cases show that reference can succeed even though the salient general representations that accompany a context-bound singular application are not veridical of the referent. I take for granted that for context-bound singular representations, no set of general representations in the repertoire of the individual need uniquely fix the referent of a context-bound singular representation by being true of or veridical of that referent.[40] In many cases, no general representations in the individual's repertoire *can* uniquely fix the referent by being veridical of it. This background point applies both to singular reference in thought and to singular perceptual representation.

Given their focus on language, Kripke and Donnellan did not address what I regard as a deeper, representationally prior issue. They did not inquire into the background of mental representation that is inevitably present in such cases. They did not ask whether the cognitive subject must presuppose or apply some empirically committal, general representation in perception or empirical thought that is veridical of the referent, if a context-bound singular representation is to succeed in referring.[41] Can singular representation succeed, even though *no* guiding general representation applies veridically to the referent? The third thesis maintains a negative answer. Empirical *de re* reference requires empirical attribution that is veridical of the referent.

Arguably, *through interlocution* an individual can refer to an object, even though literally no general representation that the individual is disposed to apply is true of it. Two adults may call a warp in space-time "Sam" and tell a child some falsehoods about Sam. The child accepts the stories and builds a fantasy life about Sam. The child has no meta-concepts. The child cannot think of Sam as the object the adults were talking about, or as the referent of the name. The child might garble the name and think of the object as Slam. The child might lack the super-

---

40. Cf. Donnellan, "Reference and Definite Descriptions"; Donnellan, "Proper Names and Identifying Descriptions"; Kripke, *Naming and Necessity*; David Kaplan, "Demonstratives," in *Themes from Kaplan*, ed. J. Almog, J. Perry, and H. Wettstein (Oxford: Oxford University Press, 1989); and my "Belief *De Re*." I think that this is a necessary truth about empirical thought. Cf. "Belief *De Re*." Certain types of singular reference ineliminably depend for being successful on causal relations external to the thinking individual.

41. I am interested in reference in perception or thought. I think a counterpart thesis for linguistic singular reference may be true. The rough counterpart for linguistic reference would be: the individual must apply or presuppose in perception or thought some nontrivial semantically general representation that is true of the referent of an autonomously used, singular, context-bound *linguistic* representation, if that singular representation is to have a referent.

ordinate concept of a spatial object (and the adults could have named a number). No guiding general representation true of the referent is available to the child. Some will deny that the child thinks about anything. I see no sound theoretical basis for such denial.[42]

Such cases are very special. They depend on special features of interlocution and on the linguistic institution of proper names. The child's use of the name in thought picks up a reference grounded in others' uses. I believe that an individual could not think about an object *autonomously* if he or she had no more kind-typing capacity with respect to the relevant object than the child has. At any rate, that is an element in the view that I want to explore. Since the child's ability to refer with the name in the absence of successful categorization seems to derive from the anaphoric or parasitic character of the child's thought, I lay interlocution aside.

I shall discuss the third thesis by centering on singular reference in perception.

It is clear that an individual and his perceptual system can mistake nearly all features of an entity, yet still succeed in perceiving (and thinking about) the entity. Color, texture, shape, surface properties, spatial location, size, motion, and sortal type can be misperceived—all in a given instance. Yet the individual, animal or person, can still see an object that is appropriately causally related to the perceptual representation. For example, one can see an entity through an unknown prismatic distortion and have so limited a view that one gets its shape, color, location, and sortal type wrong. One can see something as an object with a definite surface, whereas it is in fact a coherently formed wisp of fog or a strikingly salient beam of light, perhaps a hologram. One can form mistaken beliefs about *that* entity.

limits on perceptual mis-representation There are, however, limits on how mistaken a perception can be while still having a perceptual referent. I conjecture, for example, that to be visually perceived, an object must produce a representation that discriminates it from the surround and represents it correctly as having an approximately bounded shape that is in fact trackable in generic form. The specific shape might be misperceived. But if the object is seen, its

Evans's "know-which" requirement 42. For such a denial, see Gareth Evans, *The Varieties of Reference* (Oxford: Clarendon Press, 1982), 105–120. Evans requires that to refer to an object, one must know which object it is by discriminating it from other objects by perception, description, or recognition. More generally, he requires that one know what sort of thing would make one's thought true. In working out what this requirement means, he places restrictions on reference through ordinary cognitive capacities that I regard as poorly motivated and quite unacceptable. I find his arguments for this view as applied to memory and interlocution (127ff.) unpersuasive, his account of thoughts about natural kinds (e.g., 117) mistaken, and his strictures on perceptual belief itself excessive (151–170). For criticism of Evans that I largely agree with, see Marleen Rozemond, "Evans on *De Re* Thought," *Philosophia* 22 (1994): 275–298. I think that his view is a rearguard defense of the old over-reliance on individual knowledge and control in determining a referent, an over-reliance driven by the traditional philosophical hyper-intellectualization of accounts of thought.

shape must bear some systematic relation to the specific presented shape (such as being a bounded deformation of it).

Suppose that light comes from an odd angle. Its reflection off particles in the air causes a representation as of an object as straight ahead. Suppose that neither the light nor the particles form any coherent, trackable shape analogous to the apparently trackable shape of the apparent object. The light is not a flash with a shape that is a deformation of the shape represented, nor is it a hologram. Then I think neither the light nor the dispersed particles are perceptual referents, with misperceived features. They are not seen at all. There is only perceptual referential illusion.

Perception here does not fail merely because the light is not where the perceptual system represents an object as being. We can perceive things while mislocating them. Perception does not fail because we cannot see light or dust and mistake them for more mundane objects. We can.[43] The problem is that the light and particles lack any spatial coherence that is like the bodies and surfaces normally tracked by the individual or his visual system. The visual system's binding various representations together into a representation of a single entity does not correspond to any such system of properties in the environmental causes of the complex representation. The seen entity, if it is seen as a body, must have something like the boundedness of a trackable object. Perceptual systems have abilities to group and track such generic shapes as *bounded*. They therefore have such generic representations.

The requirement is certainly not that perceived entities must be internally spatially connected. We see constellations, flocks of birds, and so on. In some of these cases, we also see several bounded objects at once, and successful perceptual reference to the group depends on seeing a sufficient number of the component objects as bounded. In other cases, the gestalt of (approximate) boundedness of the whole is all that matters. I will not try to specify here the exact identity of representations that

---

43. Thus it is important to see here that the veridical guiding perceptual representation need not be the ecologically or practically most fundamental guiding representation, the basic categorizing attributive—in cases where one perceives an object. One can perceptually represent a particular as a body with an integral connected shape, and be mistaken about the particular's being a body. What makes perceptual reference possible—what makes it possible that one sees the particular flash of light or hologram—is the guiding, generic shape representation, not the guiding body representation.

It may be true that to perceive physical bodies, one must have and sometimes attribute the guiding perceptual representation body. It does not follow that when it is attributed, this representation must be veridical of a particular if the particular is to be seen. It does not even follow that one cannot, on occasion, perceive a particular physical body in cases where one does not attribute body to the particular. One might perceive something as a flash of light with a certain connected form, and what one actually perceives is a body with that form. I believe that in the case of *successful perceptual reference* in vision, shape attributives may be more fundamental than the attributive body, even though the latter has a more fundamental role in the explanation of much action.

must be veridical if various types of perceptual references are to succeed in being veridical. But it seems to me that these examples are suggestive.

Argument for a Restricted Version of the Third Thesis

I would like to give an argument that explains the truth of the third thesis. I shall again concentrate on specifically *perceptual* representation. Begin argument Suppose that a perceptual, context-bound, singular representation S picks out some particular entity E. E must be of some kind and must have properties. For E to be perceived, some aspects or properties of E must play a role in the causation of S. These aspects or properties must be one of a group of causal factors that are instances of a pattern.[44] If stimulation of the sensory organs were to occur within the parameters of the pattern again, another singular representation would be triggered. If the distal stimulation were of the same type, and it produced relevantly similar proximal stimulation, the new singular representation would also be successful. There is room, of course, for various types of stimulation to trigger any given singular representation. But this variety must fall within some general repeatable pattern if the success of any given occurrence of singular representation is to constitute exercise of an ability—and if success is to be explainable.

E's causal contribution to the general pattern must be through some of its properties or aspects. Some of E's properties or aspects will be irrelevant to producing the pattern. If E is a body, properties of the sides of E that do not reflect light to a visual system will make no contribution. Or if E is an instance of shape property, certain aspects of the instance (its angles' adding to 180 degrees, or its touching a circular entity) may make no contribution. Call the set of relevant properties "P."[45]

Some proper subset of P is of representational significance. For example, indiscernible components of E may be causally relevant but representationally irrelevant. The aspects that are representationally relevant are those that the perceptual system can discriminate and represent. A condition on perceiving a particular—on applying a perceptual context-bound singular representation to it—is that the individual or his perceptual system perceptually discriminate the particular by percep-

---

44. I am not suggesting that it is metaphysically necessary that any causation be part of a pattern. Rather, given that we are dealing with perception (an empirically determinable matter), it is necessary that perception be an ability that is responsive to certain patterns of stimulation. Such stimulation will produce perceptual representations given any stimulation within the pattern, if the antecedent psychological states of the perceiver are fixed. This macro (approximate) determinism is well entrenched in any empirically reasonable theory of perception.

45. If E is an instance of a relation, matters may be more complex. There are issues about perception of relations that I have not sufficiently understood, much less explained.

tually discriminating some of its properties or aspects.[46] The point grounds psychological explanation of perception. For it to be psychologically explainable how the individual or perceptual system discriminates E, some of E's properties that help cause S, some subset of P, must ground an explanation of how the perceptual system perceptually discriminates the particular E. There must be something about E that enables the individual and perceptual system to discriminate it perceptually from other particulars, possibly feature-instances, that causally affect the perceptual system, but that are representationally irrelevant.

By the argument for the second thesis, perceptual responses by the perceptual system must be type-identified in terms of a nonschematic, attributive, semantically general, ability general representation that guides S. Perceptual discrimination of E, involving successful singular representation of E, is a perceptual response. So perceptual discrimination of E via a subset of P (a subset of E's properties) must be explained in terms of a perceptual response type-identified by such general representations. For an individual or perceptual system to perceptually discriminate E via some subset of E's properties in a way that is systematically and correctly explainable in terms of a representational response by the perceptual system to the causal effect of those properties—a response type-identified by a nonschematic, semantically general, ability general attributive—*is* for the individual or perceptual system to apply such representation veridically to E.

If the individual or perceptual system does not perceptually discriminate the particular (even partly) in terms of aspects of the particular, there could be no explanation of perceptual discrimination of that particular rather than any number of other particulars that figure in causing the same effects on the perceptual system. More fundamentally, there could be no way that the perceptual system representationally discriminated the particular. The problem of accounting for representational specificity again lies close to the heart of the argument.

The argument applies no matter what E is. As I have emphasized, many particulars enter into causation of a successful singular representation in perception. Particulars in the sensory pathways or in the causal chain that links perceptual objects and proximal stimulation can be excluded on the ground that they are not at the right ecological "level"

---

46. The distinction between individual and perceptual system is not, I believe, significant for this argument. Many transformations on representations carried out in the perceptual system are not consciously available to, and are not acts by, the individual. Similarly, the fundamental principles governing the formation and transformation of perceptual representations are modular and not available to the individual. On the other hand, most of the perceptual representations in the perceptual system—certainly the conscious ones—are also perceptions by the individual. The point of explanation in perceptual psychology is to explain the perceptions that individuals have, and the representational successes and failures of these perceptions. The explanation locates those perceptions (perceptual representations) in a perceptual system governed by general principles.

to enter into explanations that bear on perception and action on the environment. Individuation of perceptual representation is partly governed by such explanations. There will still be various particulars that figure in causing any given occurrence of a context-bound singular perceptual representation S, but that do not figure in the psychologically relevant explanation of the *perceptual* discrimination of E, the referent of S. They are not particulars that the perceptual system responds to in discriminating E. To successfully perceive E, the individual and system must get something about E right. They must exercise a perceptual ability to discriminate some aspect of E that distinguishes E from other particulars (a) that figure in explanations of the individual's use of perception in satisfying needs; and (b) that play a causal role in the production of S.

The argument implies that even if salient perceptual representations fail to be veridical of a perceived entity, some guiding representation must be veridical of it if there is to be a psychological explanation of how the perceiver or his system discriminates that entity in the context. If place, kind, color, and particular shape are misperceived, there must remain something about the entity that the perceiver and system get right. Getting something right discriminates the entity by guiding the singular representation through a feature of a particular that distinguishes the particular from particulars of other kinds in the environment that figure in the causation of the particular perception.

This point seems to me just as applicable to perception of features as to perception of individual objects or events. One might see some green but see it as yellow; one might get its position wrong; one might get wrong what object it is a color of. But one must discriminate it in some way. Perhaps one must get right that it is a more or less connected expanse of a more or less uniform color. If even such generic representations as this one go wrong, there is no seeing a color instance. There is no explanation of wherein the perception is of the color rather than of an associated shape, or some part of the color expanse, or the surface.

I want to make a more abstract point about what must be "gotten right" if an entity in the environment is to be perceived. The visual system represents entities as located outside itself. Doing so is central to the role of perception in generating motor activity geared to coping with perceived entities. We can perceive entities even though we are mistaken about where they are. But if the visual system represents an entity as being in a location and the representation is caused merely by some event in the optic nerve, nothing is perceived. Perception fails because the causes of the representation are not located in the environment. The system's commitment to the entity's being located in the environment must be veridical if normal visual reference is to succeed.

Not understanding this point lies at the root of the hoary mistake that we see sense data or that we see hallucinations. One can understand the phenomenal basis for such usage. There is a sense in which it is harmless

as (I think stretched) ordinary language. But a philosophy that does not distinguish a notion of perception and sight that firmly excludes such cases as instances of successful perception misses out on fundamental functional and individuative distinctions that lie at the basis of understanding the nature of perception and perceptual representational kinds.

It does not follow from *this* point that there must be a veridical perceptual representation that accompanies and guides successful perceptual reference. In particular, it seems implausible to presume that the perceptual system has an abstract representation like spatially located in the external environment. Although such general *conceptual* representations have contrast value for a mature thinker, they do not provide any usable distinction for a perceptual system. So located in the external environment is not a perceptual attributive, a representation available to the perceptual system itself. Subhuman primates and young children probably lack any counterpart *concept*, even though they incorporate their perceptual representations into a belief system.

So the abstract point is a weaker, less committal point than the third thesis, or the argument for it. I think it worth articulating because it is relevant to the epistemology of informed reflection.

Determining what representations must be veridical if various particulars are to be seen is a complex empirical matter. There is information even in nonveridical kind-attributions from which one can, on mature reflection, abstract general *concepts*, like located in the external environment, that must be *presupposed* to be veridical of perceived particulars. One can do this in the absence of knowledge of what general representations *used by the system* must be veridical of perceived particulars. Such concepts are presupposed by perceptual systems.

Let me shift gears. We can imagine a sophisticated adult in disorienting circumstances thinking: "I do not care whether *that* is spatially located in the environment in the usual way. It may be a reflection on the retina. Or it may be an internal image. I want to know what *that* is."

It does seem possible to refer in this way.[47] Is the reference in thought unaccompanied by any general representation that is true of the referent? I believe that carrying out such a reference involves canceling the normal commitment to an environmental location for the object of perceptual reference. To do this, the thinker must *have* concepts of appearance, perceptual representation, retinal image, and so on—in addition to physical object concepts. An individual that knew nothing of reflections on retinas or perceptual representational images could not make reference to them. Thus the thinker *has and applies* a disjunctive concept that guides disjunctively and that is true of the referent: either physical object or retinal image or perceptual representation.

47. The sophisticated adult understands the demonstrative that to apply, in a default manner, to a physical object if the perceptual system is successful in perceiving such an object, and to a retinal or (presumably as third backup choice) internal image if it is not successful.

Children and apes probably cannot think of their perceptions as being caused by objects. Neither they nor their perceptual systems represent causal relations between perceived objects and perceptual representations.[48] But an individual that thinks the thought just discussed probably must do so. Taking retinal reflections and internal images as possible referents of a perceptually guided demonstrative requires having some concept of possible causes or explanations for perceptual representations other than the normal ones. I think that such an individual presumes a meta-view of the referent as a cause of the perceptual representation.

I think that appeals to such meta-representations in accounts of reference are usually cheap (explanatorily unilluminating) and mistaken. In this case, meta-representation is forced by the individual's sophisticated move of canceling the standard presumption of spatial location generated by the function of the perceptual system. Even here, the meta-representation is not sufficient to fully specify the referent. The individual is usually incapable of specifying which relevant cause or explanatory factor is the referent. The general meta-representation provides only a loose restriction on the reference, at most a necessary condition, not a sufficient one. The demonstrative applicational element in the thought remains irreducible.

The limits of perceptual error form a rich topic. The third thesis invites more exploration.

IV

The first two theses concern conditions on the role of psychological abilities in determining perceptually based representation. The third thesis is about conditions on successful, context-bound, singular, perceptually based reference. The fourth thesis is about opportunities for knowledge implicit in the psychological and referential requirements so far discussed.

The anti-individualist role of contextual and causal relations in fixing *de re* reference, and in individuating the representational content of psychological states, has seemed to some philosophers to displace the definitional and inferential relations among concepts that were traditionally relied upon as bases for claims of apriori knowability. It is true that

---

48. The view that causation is a perceptual category that applies in perception to the relation between perceptual objects and perceptions themselves was defended as a thesis in psychology some years ago. Cf. A. Michotte, *The Perception of Causality*, trans. T. R. Miles and E. Miles (London: Methuen, 1963; translation of 1946 French edition). There are numerous empirical objections to the theory, and it is no longer taken seriously in psychology. (Some psychologists take seriously Michotte's less ambitious but still controversial view that *perception* attributes causation between perceived physical events.) John Searle argues for the stronger Michotte view in *Intentionality* (Cambridge: Cambridge University Press, 1983). I criticize his argument in "Vision and Intentional Content."

not only context-bound singular reference but also semantical applicability of empirical, semantically general, ability general concepts and percepts are almost never fixed by definitional or inferential relations among concepts. Such reference and semantical applicability are partly dependent on nonrepresentational (for example, causal) relations to the environment. In view of this fact, one might conjecture that nothing can be known apriori from singular *de re* perceptually based reference, and that nothing can be known apriori in using empirical concepts—beyond logical and mathematical truths involving such reference or such concepts inessentially. One might deny that one can know apriori such conditionals as if that [perceptually presented as a body] is anything, it is a dog, or if something is a cat then it is an animal. One could generalize to a view according to which empirical concepts are introduced to apply to *whatever best empirically explains their introduction*, where it is a very open empirical question how to explain any given introduction.[49]

I will not try to adjudicate the examples just mentioned. I think, however, that the general view is mistaken. The fourth thesis is:

> *Some of our perceptually based de re states and attitudes, involving context-bound singular representations, can yield apriori warranted beliefs that are not parasitic on purely logical or mathematical truths.*

The apriori warrants depend on the *nature* of perceptual representation.

I will not try to specify exactly what beliefs count as parasitic on logical and mathematical truths. An example is: if that entity exists, it is self-identical.[50]

---

49. This is a form of indexicalism. For discussion of other forms of indexicalism, see my "Phenomenality and Reference: Reply to Loar" and "The Indexical Strategy: Reply to Owens," in *Reflections and Replies: Essays on the Philosophy of Tyler Burge*, ed. Martin Hahn and Bjorn Ramberg (Cambridge, Mass.: MIT Press, 2003). Holding that all our empirical concepts are indexical misses the evident specificity of our conceptual and perceptual representations.

I think it beyond serious doubt that our ordinary empirical concepts are not introduced in the way indicated in the text. But would concepts so introduced fail to support the fourth thesis? The apriori connection between the concept and the concept of an explanation would remain. The introduction, associated as it is with perception, must presume that what the concept applies to has causal properties. If the concept is allowed to depend on the perceptual representations of the introduction, there is the further connection to the concept of spatial location, and any other concepts that conceptualize limitations on the relevant perceptual reference. Thorough discussion would require investigating conditions on what counts as an introduction of a concept. These are the perceptual and presupposed unifying conditions that enable an explanation to get started.

50. Some believe that use of the demonstrative either guarantees a referent or guarantees commitment to there being a referent. I think it clear that one can use a demonstrative while being aware of the possibility that one could fail to refer. Suppose that one is in a psychological experiment where one has already learned that some fraction of

I think that there are apriori knowable truths derived from basic limitative principles of the sorts indicated by the third thesis. These principles govern reference of perceptual representations in perceptual systems. For example, some truth like if that object [visually presented as a body] is any object at all, it has a trackable, integral three-dimensional form is apriori knowable. Further, if that object [visually presented as a body] exists, then it is spatially located in the environment is apriori knowable. Suppose that the individual does *not* cancel the default presumptions of perceptual judgments. There is no special allowance for reference to retinal images or internal perceptual representations. In such cases, no sense experience need figure in a warrant for the relevant beliefs. Belief in such truths can be warranted by reflection on limitative principles governing perceptual reference. Thus apriori knowledge and apriori epistemic warrant can exploit limitative principles deriving from the third thesis.

These truths are nonlogical, nonmathematical apriori truths (apriori knowable truths) about perceived objects. I shall first discuss the sense in which they are nonlogical or synthetic. This sense will suggest why they are nonmathematical as well. Then I will develop the sense in which they are apriori.

It may appear that the conditional truths associated with the limitative principles are tantamount to logical truths of the form if something is a brown oblong object, it is brown and oblong or if something is a body with an integral three-dimensional form, it has an integral three-dimensional form. The appearance is deceptive.

Perceptually based thoughts are rather special. When perceptually guided in thought, the demonstrative *that* can succeed in referring even if some of its accompanying general representations are not veridical of its referent.[51] Thus in thinking the perceptually based thought that brown oblong body is brown and oblong, one can perceive and think about a body referred to by the token-application of *that* even though the body is not brown or oblong. In these cases, one cannot infer from the success of one's perception of an object and the nature of the perceptual attribution (or perceptually based attribution in thought) *alone* that the perceived object has the perceptually attributed properties.

In the third thesis, I held that perceptually based referential success is *not* possible if *certain* general representations are not veridical of the referent of the context-bound, singular element. I held that is spatially located must be true of objects of visual perception, in the absence of an

---

one's attempted perceptual or other demonstrative applications have failed. The example discussed near the end of section III points in this direction. I believe that perceptual demonstratives are not infallibly successful in having a referent, because perception is not infallible. I believe that in given cases one is quite able to realize this and to suspend belief about whether a given reference has succeeded. The examples that follow assume these points.

51. Cf. Donnellan, "Reference and Definite Descriptions."

explicit cancellation of a default presumption that underlies visual per-
ception. I conjectured that some general representation of trackable,
more or less connected, or integral, spatial form must be veridical of
the referent of context-bound singular perceptual representations that
pick out physical bodies. I conjectured that some color attributive must
be true of any color instance that is perceived. And so on.

The points made in the preceding two paragraphs indicate that there
are important differences among perceptually based attributives in their
roles in purporting to restrict perception of particulars. Some perceptual
attributives that guide singular elements in perception, or that are pre-
supposed by perception, must be veridical of the perceived particular if
perceptual reference is to succeed. Other perceptual attributives accom-
panying the singular elements need not be veridical of the referent.

For example, with respect to a purported perceptually based reference
to a body, (something like) integral three-dimensional form must be
veridically attributed in perception to the perceived body if perceptually
based reference to a body is to succeed. Similarly, for conceptualizations
of this perceptual attributive. The conceptual attributive spatially located
presupposed in visual perception must also be true of a visually perceived
referent if the referent is to be perceived (assuming no cancellation of the
default position). By contrast, brown and oblong need not be veridical
when they are attributed and the body is perceived. Similarly, perhaps
more or less uniformly colored must be veridical of a perceived color
instance, if a perceptually based reference to a color instance (as of
orange, for example) is to succeed. By contrast, orange need not be
veridical of the perceived color instance.

How do these points bear on knowledge?

There is, I think, a certain natural construal of

 (LT) If that brown oblong object exists, it is brown and oblong
(LT′) If that object is a trackable, integral three-dimensional body, then it
is trackable, integral, three-dimensional

on which the relevantly expressed thoughts are logical truths. They can
be known through understanding their forms. On this construal, the
antecedents cannot be true unless there exists a demonstrated object
and it has the properties attributed to it (e.g., brown and oblong).
Then, of course, if the antecedent is true, the consequent must be true.
The truth hinges on logical form.

There are closely related thoughts, however, that are not logical
truths. These thoughts can perhaps be elicited by this formulation:

(EC) If that object [perceptually presented as a brown, oblong body]
exists, then it is brown and oblong.

I take it that the thought relevantly expressed by this formulation can be
known to be true only if either the perceived object is *empirically* known
to be brown and oblong, or there is some other empirical knowledge that

any object perceived in the context will be brown and oblong. A connection between the perceived entity's existing and its being brown and oblong can be known only empirically.

By contrast, consider

 (AC) If that object [perceptually presented as a trackable, integral, three-dimensional body] exists, it is trackable, integral, three-dimensional.
 (AC′) If that particular [perceptually presented as an instance of orange] exists, then it is a more or less uniform expanse of some color.
(AC″) If that particular [presupposed in visual perception to be spatially located, where the default presumptions are not canceled] exists, then it is spatially located.[52]

Here the connection between successful perception and the guiding attributive (in the first two examples) or the presupposed attributive (in the third example) can be known apriori.[53] Successful perception itself is dependent on the attributive's being veridical of the perceived object. Perception must figure in the warrant for a belief that the perceived entity exists. It must contribute to the warrant for believing that there *is* an entity with the attributed feature. But epistemically, the existence of the perceptually referred-to entity and the veridicality of the basic attributive as applied to the entity go together. Warrant for belief in the conditional comes as a nonempirical package.

The *connections* between the entities' being perceived to exist and their having the relevant attributed features can be known nonempirically in (AC) through (AC″). This is because the connections are epistemically relevant conditions on successful perception. Being warranted in relying

52. The resemblance between the notation in these formulas and David Kaplan's "dthat" notation is intentional. Cf. his "Demonstratives," in *Themes from Kaplan*, ed. J. Almog, J. Perry, and H. Wettstein (New York: Oxford University Press, 1989), section XII. The main differences are (a) that here we are discussing mental representation, not language, (b) that here what goes in the brackets is an attributive, not a singular term; (c) that here what goes in the brackets expresses attributives that are attributed or presupposed in thought by the individual thinker. I take it that the demonstrative can succeed in referring (in thought) to a particular even though some of the attributives applied in thought and expressed within brackets fail to be veridical of the particular. The point of the present discussion is that in such cases, there must be some attributive associated with the application of the demonstrative that is veridical of any particular that is referred to. I believe that certain guiding attributives have this status for given types of *de re* reference.

53. There are interesting issues in distinguishing the role and epistemic status of different types of restricters that can be known apriori to be necessarily connected to successful perceptual reference. For example, I think it important to distinguish restricter attributives like integral three-dimensional form from those like trackable. Unlike attributives that apply to generic spatial forms, trackable is a representation that is not likely to be attributed to perceived objects in perception itself. A body must be trackable if it is to be perceived. I think that we can know this apriori through reflection. But attributives that apply to the relation between perceived entities and the capabilities of the perceptual system are not employed by the perceptual system. Thus trackable is like spatially located in being pre-

on the connection between the perceptually based attributives and the application of the perceptually based demonstratives is a condition on being warranted in applying the perceptually based demonstratives. So warrant for perceptual applications—for perceptually warranted perceptually based thought—presupposes warranted connection between those applications and the relevant guiding (or presupposed) attributions. The connections derive from conditions on veridical perception itself.[54] So the empirical warrant involved in perceptually based thought—warrant that derives from perception—presupposes a warrant for accepting the relevant connections. So the warrant for accepting the relevant connections is not empirical. Since thoughts of the sort expressed in (AC) through (AC″) make commitments to the relevant connection, belief in them is warranted nonempirically.

Thus the basic limitative principles on perceptual reference yield apriori knowledge. The thoughts that connect the referents of perceptually based demonstratives with the properties attributed by the basic attributive restricters on singular perceptual reference can be known apriori. In these cases, one *can* infer apriori from any success of one's perception of an object and the nature of the perceptual attribution (or perceptually based attribution in thought) that the perceived object has the perceptually attributed properties.

It should be carefully noted that the apriori warrants for instances of fundamental limitative principles governing perception do not derive purely from understanding the logical form of the relevant thoughts. Thoughts expressed by (AC) through (AC″) are knowable apriori, but the thought expressed by (EC) is knowable only empirically. What lies at the root of the warrants for the thoughts expressed by (AC) through (AC″) is reflection on the nature of perceptual reference, not on general logical principles. In this sense, truths like those expressed by (AC) through (AC″), and the limitative principles underlying them, are not logical truths. Knowledge of them does not depend purely on understanding the form of the thought. It depends also on reflection on the particular perceptually based predicative concepts involved, and on the limits on perceptual reference. The most general principles limiting perceptual reference are associated with nonlogical, nonmathematical truths that we can know with apriori warrant.

The guiding representations underlying successful reference seem to be much more generic, at least in perception but I think also in thought, than the tradition commonly supposed. Perception of individuals and empirical thought about them can survive much more fundamental

supposed by the perceptual system, although I think that the ground of the presupposition is different in the two cases.

54. I think that belief in connections of this sort is warranted because reflection shows that each such connection is a general, representational, necessary condition on the success of the relevant type of perceptual representation. Warrant presupposes reliable success in

error than many theories allow. Still, the limitations on successful empirical reference are not warranted through perception. They are conditions on the possibility of perceptual experience and empirical thought about the world.

The epistemology of restrictions on perceptual reference is a rich topic. I want to comment briefly on one complex issue here: It is important to distinguish apriority from availability to armchair reflection.

I shall discuss cases in which some apriori knowledge is not armchair knowledge but depends for its *availability* (as distinguished from its warrant) on specialized empirical investigation. I take it as obvious that some armchair knowledge is not apriori knowledge. By epistemically relying on widely available empirical truths, one can reason to conclusions without engaging in empirical investigation.

I believe that *some* of the apriori warranted knowledge that resides in the limitative principles is available to such armchair reflection. The general arguments for the existence of attributional restrictions, which I gave in sections II and III, are both apriori and available to armchair reflection. Moreover, some of the specific knowledge that instantiates those principles is both armchair and apriori. For example, the requirement that perceived bodies be trackable over at least short periods of time (even if they are not in motion) seems to me to derive from reflection on the need to distinguish body representations both from event representations and from the key shape representations that guide (visual) body representations.

On the other hand, some apriori knowledge that resides in the limitative principles can be elicited only through empirical investigation. This is not to say, of course, that the knowledge is *warranted* through empirical investigation. It is to say that it is *available* only through empirical investigation. Even armchair apriori knowledge is probably available only through widely shared empirical experience, which gives one the conceptual wherewithal to recognize apriori truths. Some apriori knowledge can be elicited only through empirical experience that is more specialized than experience that is easily available to everyone. The empirical investigation helps determine what representation plays the role of making successful singular perceptual reference possible. It justifies a judgment about the identity of a condition-setting representation. It does not justify the role of the representation in setting the conditions on successful empirical perception. That function is not, and as far as I can see cannot be, warranted empirically.

This situation is implicit in the difficulty we have in specifying *exactly* what generic spatial form is used by human visual systems as a minimum guide in seeing physical bodies. What, more specifically, is the topology gestured at by the terms that we have been using—"integral" or "more or

---

appropriate conditions. So certain very general conditions on success are also conditions on warrant. These issues need, of course, further exploration.

less connected," or the restriction on color reference that I gestured at in the phrase "more or less uniform"? Indeed, recognition that body is a generic perceptual category, in some ways more basic perceptually than categories for characteristic shapes of specific natural kinds (the shape of a duck or a tree), was the result of empirical investigation (cf. note 37). So empirical investigation is important in identifying the relevant representations used by perceptual systems, and in recognizing their centrality. Such investigation is often necessary to the formulation of specific limitative principles that can be known apriori. But the warrant for the connection between the basic attributive restricters and successful singular reference in perception (hence in some perceptually based thought) is ultimately apriori.

Are there further apriori truths of categorization, beyond those associated with principles governing perceptual reference? Are there apriori truths about the range of application of an empirical concept that are not mere instances of mathematical or logical principles and that do not derive from principles governing the referential limits of a perceptual system? Putnam's claim that cats are, if anything, animals is not apriori points in the direction of a negative answer.[55]

I conjecture a positive answer. I think that most empirical concepts are associated with superordinate concepts that provide necessary conditions for their application. I think that one can be defeasibly apriori warranted in believing general limitative principles governing the range of application of concepts. For example, we can know apriori that water is, if anything, physical and occupies space; that if something is yellow, it is colored; and that cats are if anything entities with physical properties.[56]

Despite my advocacy of the fourth thesis, I believe that the kinds of connections that are apriori are, for the most part, very generic. The point that we know only empirically that a kind like gold or water is a natural kind and has a unifying empirical principle was already made by Kant. The taxonomic arrangement of genus and species is vastly more fluid and empirically sensitive than it seemed to be two centuries ago. The apriori connections of the classificational sort that I have discussed here are mostly between relevant concepts and superordinate concepts for *very* generic features or relations. Exploring apriori limits on empirical representation promises to be both difficult and rewarding.

---

55. Hilary Putnam, "It Ain't Necessarily So," *Journal of Philosophy* 59 (1962): 658–671; reprinted in Putnam's *Philosophical Papers*, vol. 1 (Cambridge: Cambridge University Press, 1975). See also Putnam's "The Meaning of 'Meaning,'" *Philosophical Papers*, vol. 2 (Cambridge: Cambridge University Press, 1975).

a priori warrant as fallible

56. It is important to remember here that being apriori warranted is not equivalent to being invulnerable to empirical counter-considerations. Apriori warrant concerns the source of positive support, not sources of possible overthrow. A belief can be apriori warranted even though it is vulnerable to possible empirical overthrow. The mere fact that it is epistemically possible that it turn out that there is no space or time does not show that our

V

The *de re–de dicto* distinction reaches far back into philosophical trad-
ition. Much of this tradition concerns modality. Some of it concerns
representational states. Modern discussion of *de re* states and attitudes
stems from reconsidering Russell's notion of acquaintance.[57] In "Quan-
tifiers and Propositional Attitudes" (1955), Quine made a show of reviv-
ing the distinction in his analysis of belief sentences. Although he was
sensitive to the intuitive epistemic distinction, his philosophical concerns
were almost entirely logical and linguistic.[58]

In "Quantifying In" (1969), Kaplan turned discussion back in what
I think to be the right direction—toward understanding the epistemology
of attitudes, not the linguistic form of attitude *attribution*. He explored an
"*en rapport*" representational relation between the cognitive subject's
beliefs and some *re*.[59] Kaplan avoided Russell's untenable epistemology
and philosophy of mind. He sought a relation underlying Russell's intu-
itions but grounded in everyday considerations. Kaplan was guided both
by *linguistic phenomena* associated with quantification into contexts of
belief attribution and by *cognitive paradigms* of perception and perceptual
memory. I think that he leaned too much on the linguistic phenomena.
I think that his denotation and vividness conditions, and even his of-ness
condition, are not right. These drawbacks seem to me far less important
than his valuable initiative in exploring epistemic intuitions about cogni-
tive states that go beyond conceptualization or description.

In "Belief *De Re*" (1977), I criticized some theses of Kaplan's paper and
noted some ways in which its linguistic focus blurred a clear view of the
epistemic basis for the distinction.[60] I centered the account more on
epistemic considerations. That paper is the basis for the reflections in

warrant for certain applications of spatial concepts is not apriori. This is, however, a
complex and difficult issue.

57. Bertrand Russell, "Knowledge by Acquaintance and Knowledge by Description," in
The Problems of Philosophy (1912; Oxford: Oxford University Press, 1982).

58. W. V. Quine, "Quantifiers and Propositional Attitudes," in *Ways of Paradox* (New
York: Random House, 1966).

59. David Kaplan, "Quantifying In," in *Words and Objections: Essays on the Work of
W. V. Quine*, ed. D. Davidson and J. Hintikka (Dordrecht: D. Reidel, 1969).

60. Cf. my "Belief *De Re*." The point about separating linguistic phenomena from facts
about *de re* attitudes is made in that article. The criticisms of Kaplan's use of the notions of
denotation and vividness are also laid out in that article. *Denotation* is not explicitly
contextual in his early work. I argued that the context-dependence of applications is key to
paradigmatic *de re* cases. *Vividness* seems to me clearly unnecessary to *de re* states or
attitudes, even for *autonomous* thought. Vividness is, in my view, an empiricist red herring.
Many *de re* attitudes are not vivid, and many vivid attitudes are not *de re*. Vividness does not
constitutively bear on the character of a representation's relation in being of (*de*) a subject
matter (*re*). There are straightforward counter-examples to vividness as a necessary
condition. One can form a perceptual belief of an object (or other particular) and not
register or remember enough of its features to have a vivid representation. Such beliefs

the present work. But in my 1977 paper I, too, leaned excessively on linguistic phenomena.[61]

Although nearly everyone, from Russell onward, took perception as the paradigm of *de re* phenomena, most conceived the distinction mainly in linguistic terms. Given that linguistic attribution of attitudes is subject to pragmatic pressures other than specifying the types of attitudes being attributed, there is no simple correlation between types of attribution (showing logical features like those that interested Quine) and types of state. The gradual realization of this fact led to a malaise. Some wondered whether there is any *de re–de dicto* distinction at all.

The initial lesson here is easy and old. Look not to ordinary language for immediate or final insight into the nature of things. Ordinary language is busy with too much else to provide unstinting service to philosophy or science, insofar as they are concerned with something beyond language itself. This is not to say that the nature of things is always esoteric or surprising, or that language does not yield insight. It is just to say that linguistic attribution of cognition and cognition itself are really quite different matters, with only complex relations between them.

Even with the lesson assimilated, one can find it hard to decide what should be understood by the *de re–de dicto* distinction. There are many distinctions in the area. Some grade off into vagueness after a few clear cases. Some clamor against one another to be attached to the famous terms. I believe that it remains a fruitful enterprise to seek a distinction connected with the terms that is conceptually rich, but is clear enough to serve philosophy, and perhaps even science.

I began with two of Russell's ideas. One is his idea of a representational state that is not purely descriptive. The other is his idea of perception as paradigm. Combining the two ideas, I began by reflecting on not-purely-descriptive aspects of perception. Perception does involve more than the analogs of descriptions. It involves context-bound singular elements guided by but not replaceable by nonschematic, semantically general, ability general attributive representations.

When we visually represent a scene, the visual system contributes ability general representations that attribute kinds, properties, and relations. These representations cannot be all there is to perceptual representation. If

---

are common, and even basic to action. They need not even be conscious, or driven by unconscious attention. Clearly one can have a *de re* belief of an object (or other particular) in such cases. The epistemic relation is very direct; it is only partly conceptualized; and it is context-dependent. Moreover, vividness is irrelevant to *de se* or egocentric indexes, which seem clearly to be subspecies of *de re* reference. (The distinction between *se* and *re* is not ontological. *Se*'s are *re*'s. The distinction lies in the mode of presentation.) In effect, I criticize the causal *of-ness* condition—Kaplan's third condition on *de re* thought—in section V of this essay. The basic idea of reference that is backed by an immediate nonconceptual representational and epistemic capacity, which grounds my present positive account, is initially developed in "Belief *De Re*."

61. Cf. my "Postscript to 'Belief *De Re*,' " in my *Foundations of Mind*.

a perceptually indiscernible scene were to be somewhere else in the universe, one would perceive the scene that causes one's perception, not the duplicate scene. Intuitive and scientific considerations rule out attributing to the perceptual system representations like <u>whatever causes this representation</u> (cf. note 48). The perceptual system cannot itself discern the difference between the two scenes by means of its general representational abilities. Since representations function partly to mark ability, the general representational abilities should be type-identified or marked by semantically general representations, which apply to both scenes. The perceptual system functions to represent entities relevant to the individual's functions. In the case of hypothetical duplicates, the individuals see and perceptually represent particulars that cause their perceptions in the context. So a context-bound, semantically singular element is needed to account for the perception's (fallibly) representing the particulars that cause it.[62]

I took perception to be a paradigm *de re* state. An initial hypothesis arose from reflection on this paradigm. The *de re* nature of the states constitutively depends on their being partly type-identified by context-bound singular representations (applications) that do not rely purely on nonschematic, semantically general or ability general attributives for their representational success.

Extending this initial paradigm to perceptual memory, to perceptual belief, and to belief based on perceptual memory would raise many interesting issues of detail. I think, however, that the basic form of the extension is not hard to see. All such states have in their representational content a singular representational element, inherited from perception, that marks a fallible representational ability that is context-bound, not ability general. All such *de re* states and attitudes involve representational abilities that are singular and context-bound. This is the analog of the more linguistically oriented dictum: Showing beats telling.

Before proceeding, I want to flag an issue that I will not pursue here in depth. Strictly speaking, to be *de re*, a state or attitude must *succeed* in referring to a *re*. Seeing requires referential success and is paradigmatically *de re*. Is seeing a psychological state or attitude?[63] Ordinary language is liberal with state talk. Perhaps it is a state. I doubt, however, that it is a fundamental explanatory kind, as opposed to a kind to be explained, in psychology. Even if it is, there are psychological kinds that include both seeings and perceptual, even referential, illusions. Such kinds figure in explaining seeing.[64]

[margin note: Seeing as a psychological attitude]

62. The main idea of this argument derives from Peter Strawson's brilliant duplication argument, *Individuals* (1959; Garden City, N.Y.: Doubleday, 1963), chap. 1.

63. Cf. Timothy Williamson, "Is Knowing a State of Mind?" *Mind* 104 (1995): 533–565. It would be a mistake to construe the view that I develop in what follows, and elsewhere, as regarding seeing as *analyzable* into visual representation and causation.

64. For an extensive discussion of this issue, see my "Disjunctivism and Perceptual Psychology."

Explanations in psychology fix on perceptual states that in normal conditions constitute seeing. They are motivated by the phenomenon of seeing. They begin by explaining the successes. Anti-individualism takes seeing to be the phenomenon that underlies the determination of ability general visual representations. But the methods and explanations of psychology often count states the same in conditions when the individual and perceptual system are fooled. It is central to the methodology of the science of vision that this be so. There are solid general empirical reasons for this methodology that I shall not go into in detail here.[65] Briefly, psychological kinds involve the processing of perceptual representations according to certain principles that come into play given stimulation of the retina. These principles hold regardless of whether the stimulation derives from a *re* in the normal way that makes successful perception possible. In cases where the representations arise from contextually abnormal distal conditions, the psychological processing may remain the same. Perceptual states are individuated in psychology to allow the same kind of state (at one level of kind-individuation) to be the same whether it is veridical or illusional. Explanatory successes in the psychology of vision have been united in following this methodology.

The difference between successful perceptual reference (or seeing) and perceptual referential illusion can be serendipitous. The difference can turn on the whim of the experimental psychologist. Fundamental psychological explanation abstracts from such vicissitudes. Even if seeing *does* turn out to be a psychological kind in this narrow sense, it is clear that there are explanatorily relevant psychological kinds that are not factive, as seeing and knowing are.

I am interested in the broader array of psychological states that help explain seeing, even though not all are successfully "of" a *re*. Seeing and other strictly *de re* phenomena are explicitly relational kinds.[66] They are real. They are in some ways fundamental. They motivate the explanatory kinds that psychological explanation actually uses. These kinds have the same form as strictly *de re* phenomena, but they do not require referential success. They constitute an important psychological kind. When I write of *de re* states or attitudes, I mean that they are proleptically *de re*: They are states and attitudes of a sort that when successfully referential are *de re*.

---

65. Cf. "Disjunctivism and Perceptual Psychology."

66. For earlier statements of this view, see "Belief *De Re*." Note that knowings are not the only *de re* propositional phenomena under the strict usage. One can have a *de re* belief that is successfully referential and meets all other conditions on being *de re*, which nevertheless fails to count as knowledge. Suppose that one is looking directly at an object and that one forms a true belief about it. Suppose that one has good reason to doubt that there is really an object there. For example, suppose that one is in a psychological experiment where one has good reason to believe that one has been fooled frequently. Suppose that one ignores this good reason. Then one lacks knowledge. But one has a *de re* belief of the object. I have not been able to think of any purely visual states that are strictly *de re*, and therefore successfully referential, which are not also seeings.

Let us return to the issue of what if any states and attitudes to count as *de re*—beyond perceptions, perceptual beliefs (and other perceptually informed attitudes), and memories of all these. "*De re*" is a term of art. One could stop here. I think, however, that there are further cases that belong among mental states or attitudes that can reasonably be counted *de re*. We should avoid the empiricist presumption that the only sort of not-purely-descriptive representational or epistemic relation that we have to a *re* is through perception. Avoiding this presumption leads to a range of interesting phenomena that have some of the "directness" of the perceptual, but that are not empirically based and not dependent on causation in the same way that perception is.

four cases of non-perceptual de re

All cases of *de re* states and attitudes so far discussed have featured causation by the referent. I think that there are *de re* states and attitudes that do not have this feature.[67] I begin simply by collecting some examples. Collection will continue to be guided by Russell's idea of reference to an object via not-purely-descriptive means. There are at least four types of cases.

indexicals in thought

One type involves uses of simple indexicals in thought. My occurrent thought I am thinking seems clearly *de re* with respect to me. The referent of I is not fixed by some event in me causing the occurrence of I. It is fixed by my authoring the thought. The referential and epistemic access to myself in such a case is not essentially empirical. I can know empirically that I am thinking. But referential and epistemic access to myself need not rely on empirical means. I may have already identified myself through my awareness of the thinking. If the empirical information I had about myself were mistaken, I would still succeed in representing myself with I. Access goes through a framework role for I and through intellectual access to my occurrent thought. Neither the framework role nor the awareness of my thinking is reducible to empirical or other causal paradigms of reference.[68]

I think that similar points can be made for normal uses of now, and some occurrences of here, in thought. A thought it is now raining is normally *de re* with respect to the present moment. The referent is fixed neither by some context-free description nor by the present moment's causing the occurrence of the indexical. It need not be fixed

---

67. What should we say about uses of names of individuals that one has never perceived—"Aristotle" or "Ninevah"? Kripke and Donnellan showed that such names can refer even though their user lacks descriptions sufficient to fix their referents. There is a directness and noninferentiality to the understanding of such names that makes it kin to the perceptual paradigm, despite the poverty of information and distance in history. I believe that thoughts making use of such names can be considered *de re*. They have a special status, however. They are *de re* only nonautonomously—only through reliance on others.

68. Cf. my "Reason and the First Person," in *Knowing Our Own Minds: Essays on Self-Knowledge*, ed. C. Wright, B. C. Smith, and C. MacDonald (Oxford: Clarendon Press, 1998), and "Memory and Persons."

through perception of other things. It is fixed by context-bound application of the schematic concept <u>now</u>.

Reference through such indexicals is certainly not purely descriptive. Context-bound singular application is necessary. Our epistemic access through indexicals to ourselves, to the present time, and often to the present place is not purely a matter of perception. There need be no separate faculty of apprehension of the referents. The epistemic access is associated with the mastery of certain frameworks and systems of coordination—including general egocentrically oriented systems of action, and general temporal and spatial abilities. These frameworks mark, at their *de se*, spatial, and temporal anchor points, immediately applicable cognitive and practical abilities.

The range of "indexical" referential phenomena is wider and more primitive than the cases just mentioned may suggest. Many animals that lack propositional attitudes have perceptual systems and activities geared to their perceptions. Egocentric indexes that are relevant to action (fleeing, eating, mating perceived objects) are built into the framework of all perception and action. Framework-origins of temporal and spatial perceptual frameworks are associated with the egocentric indexes. These are primitive analogs of the conceptual indexicals, <u>I</u>, <u>now</u>, and <u>here</u>. These indexes represent their referents not through causal relations but through context-dependent orientation of the frameworks that they anchor in perception and primitive agency.

These markers' referential success does not depend on a present perceptual or other causal relation to the "referents" that they index. The referential link is established in having and using competencies constitutive of a representational perspective. All *de re* representation in states and attitudes, even in perception, hence *all* representation, presupposes that these direct, noninferential, nondescriptive links are in place.[69]

A second group of cases that are plausibly *de re* but where causation is not necessary for reference comprises certain types of self-knowledge of one's mental states and events.

Some self-knowledge is empirical and causally based. One can know one's mind from the outside by observing oneself. Even some authoritative self-knowledge has a causal base. My belief that I have a memory as of hearing Rubinstein play Chopin's Third Scherzo might be based on the belief's being caused by the memory. My belief that I am in pain might based on the pain's causing the belief.

Some of our self-knowledge, however, is neither warranted through perception nor dependent for successful reference on being caused by the mental events that are known. In the *cogito* thought <u>I am hereby thinking that music is valuable</u> there are noncausal representational relations to the author of the thought and the present time. These are *de re* indexical references of the sort already discussed. The *cogito* thought also contains

---

69. Cf. "Memory and Persons," especially section V.

de re reference to the event of thinking the thought. The representational relation to the thought event is not caused by the thought event that it is about. The reference depends on the mental activity and on the form of the thought, not on a causal relation between *re* and representation. The knowledge is intellectual, not perceptual or causal. Understanding the thought that one is thinking suffices for knowing that it is occurring.

A third type of case is closely related to the second. It seems to me that one can have not-purely-descriptive referential attitudes toward actions that one intends and that one is about to carry out.[70] I can think of this (coming) raising of my arm just before I raise it. I believe that successful reference need not rely on a description like "the action that I am about to perform." It can rely on the competence routines and power that will issue in the act. A pastor might in marrying a couple say, "Let no man put this marital union asunder." At the time of the application of "this marital union" there may not yet be a marriage. Intentional control over the future can yield not-purely-descriptive, noninferential representational relations to an object or event. I think it reasonable to count such relations *de re*.

How much control is necessary? How far into the future can such attitudes reach? Perhaps answers will never be sharp. I think, however, that noninferential cognitive relations to future entities that are under reliable representational and practical control have an epistemic directness and an independence of context-free conceptualization that make them hard to exclude from the representational and epistemic phenomena that Russell opposed to knowledge by description.

A fourth candidate type of noncausal *de re* attitudes comprises certain cognitive relations to abstract entities. Russell counted grasp of universals an acquaintance relation. I believe that this position resulted from his characteristic conflation of understanding with referential relations to objects. In predicating a concept of an object in the thought that man is a great pianist, we think the concept is a great pianist as part of thinking the thought. Thinking the concept is not a representational relation to the concept. The thought is not about (*de*) the concept. The relation should not be counted *de re*.

There are, however, cases where comprehension and reference are inseparable. Attributions of thought normally contain specification of the thought in a canonical way that requires thinking the thought content as one attributes it. When I think I (or you) believe that not all people are great pianists, I must think the representational thought content that not all people are great pianists in the course of attributing it. I also canonically *name* or *designate* the representational thought content via a

---

70. This is perhaps a distant analog of intellectual intuition, attributed by the medievals to God—an ability to intuit objects and thereby create them. Cf. note 3. We do not create by intuiting. But the intuition may be guided by the creation—the forward-looking causal power. These cases are interestingly discussed by G. E. M. Anscombe, *Intention* (Oxford: Blackwell, 1957), though not by reference to the notion of *de re* states.

singular term, the analog in thought of a that-clause.[71] My relation to the referent is not purely descriptive. It is true that the canonical specification is ability general and conceptual. But the specification is backed by *comprehension* of the referent. Comprehension is at least as direct and noninferential, psychologically and epistemically, as perceptual relations. Comprehending a representational content is exercising an ability that is constitutively associated with inference. But it is not itself inferential or descriptive. I think that comprehension is a direct intellectual capacity that *when constitutively combined with reference* can make *de re* reference possible, when reference is carried out in this canonical way.[72] I think it clear that representational contents to which we bear these *de re* relations do not cause the reference. The *de re* representation is not empirical. It is intellectual, though *some* of the relevant *de re* thoughts are warranted empirically.

Canonical specification of simple natural numbers through numerals is also arguably *de re*. (I assume a realist attitude toward the numbers. Anti-realists may form whatever conclusions they will.) We do not perceive the numbers. They do not cause our thought about them. Numerals in a canonical system contrast with nonmathematical descriptions ("the number of cats my sister has") or computationally difficult mathematical formulas. They enable one to relate any complex name by simple mechanical means to the simplest numerals. The *basic* elements of the system are repeated in combinations to form larger groups. These basic elements are like the indexical origins (or *de se* origins) of spatial or temporal frameworks. They are the starting points that we use, together with general operations, to specify other "points" (on the analogy to spatial locations or times) in the numerical system. Our ability to specify 1, 2, 3, 4, 5 . . . (certain among the smallest natural numbers) through simple

71. A special feature of these (e.g., that-clause) canonical content-names is that mastering them requires mastery of the named or referred-to contents themselves. So there is, in a certain way, an even more intimate relation between this sort of canonical name and its named contents than there is between a canonical number name like "2" and the number. Here one literally must understand the denotation (the customary content or sense) before grasping the content of the name or individual concept that canonically names it. Grasp of the denotation or referent precedes grasp of the content that represents it. For further discussion, see my "Postscript to 'Frege and the Hierarchy,' " in my *Truth, Thought, Reason: Essays on Frege* (Oxford: Clarendon Press, 2005).

72. A more empirical case involves thought about color types represented in perception or memory by a color-sighted person. The color type does not cause the thought. It has no causal power. Only instances of the color type can cause anything. One might think of the color type *without remembering any instance*. There does remain some causal relation back to instances in the learning history. But it is implausible to think that any given instance caused this occurrence of thought. Moreover, one might imagine a color shade even though one never saw an instance. One might imagine the color while one is thinking of it. The image itself does not have the color. Here is *de re* thought without direct causal connection. I think that one could think *de re* of the color without imagining it at all. The *power* to imagine it seems arguably sufficient. I am indebted to Mark Johnston for the idea of this note, though not the details.

words or noncomplex numerals, has an epistemic primitiveness that is relevant in determining what should count as *de re*.

There is evidence that some abilities with small numbers are universal among humans, despite differences in symbolic systems. For example, humans can determine correlations between images or perceptions of groups of objects and these numbers very quickly, without counting or calculating. This ability is widely studied in cognitive psychology under the rubric *subitizing*.[73] In fact, perceptual subitizing is common throughout the animal kingdom. Of course, the perceptual system computes, but these computations are modular. The *individual's* noninferential recognition of the number of a small group of items is approximately as immediate as any perceptual representation. Subitizing is not perception of abstract objects, the numbers. But in individuals who have an understanding of a numerical system, the primitive subitizing capacities join with conceptual abilities to support noninferential, noncomputational numerical assignments in thought to small groupings. These assignments are associated with noninferential conceptual ability to use canonical specifications of these numbers as *bases* for computations (that is, without representing these numbers as the products of computations). So the representation 2 is primitive—in contrast to compounds like the successor of 1 or 12.

These noninferential representational and applicational abilities are the basic elements in a great deal of mathematical knowledge. Resolution of computations into basic psychological and epistemic elements offers a ground for understanding effectiveness (or effective calculability), mathematical proof, and so on. Thus certain small natural numbers, though certainly specified conceptually, can be naturally associated both with immediate conceptually aided perception of groups as having those cardinalities and with immediate (noncomputational) representation of numbers in pure, nonapplied arithmetic. I conjecture that it is reasonable to count representation of mathematical objects that is backed by such noninferential abilities of application and understanding as *de re* with respect to those objects.[74]

73. A. Klein and P. Starkey, "The Origins and Development of Numerical Cognition: A Comparative Analysis," in *Cognitive Processes in Mathematics*, ed. J. Sloboda and D. Rogers (Oxford: Oxford University Press, 1987); Karen Wynn, "Psychological Foundations of Number: Numerical Competence in Human Infants," *Trends in Cognitive Sciences* 2 (1998): 296–303; J. Whalen, C. R. Gallistel, and R. Gelman, "Nonverbal Counting in Humans," *Psychological Science* 10 (1999): 130–137; M. C. Uller, S. Carey, G. Huntley-Fenner, and L. Klatt, "What Representations Might Underlie Infant Numerical Knowledge?" *Cognitive Development* 14 (1999): 1–36. Subitizing occurs in lower animals that lack propositional attitudes. I believe that subitizing does not itself make reference to numbers. It certainly occurs phylogenetically earlier than even the most primitive mastery of the arithmetical system of numbers. But I believe that it is a source of immediacy in arithmetical cognition.

74. Kaplan, in "Quantifying In," section VIII, discusses canonical names, calling them "standard names." He counts quotation names and numerals as examples. He centers on

What can be immediately, noninferentially surveyed may vary with expertise and ability. What impresses me is that there is evidence that there are relatively sharp and universal boundaries between those number specifications that can and those that cannot be applied (or used in pure arithmetic) by ordinary people without counting.[75]

I have taken as key to the *de re–de dicto* distinction Russell's idea that *de re* states and attitudes involve a capacity for referring to entities that is essentially nondescriptive, noninferential, and epistemically immediate. Perception, perceptual belief, and perceptual memory provide a start toward understanding *de re* states and attitudes. I maintained that resting there would be to accept a narrow empiricist conception of our basic cognitive and representational capacities. I believe that we have *de re* representation *through understanding*, not just perception.

I outlined four capacities for referential representation that seem to go beyond the perceptual paradigm. All involve not-purely-descriptive representations of objects. All go beyond use of ability general, purely descriptive representations. All are backed by epistemic capacities that are noninferential, immediate, and nondiscursive.

Representation with certain indexicals and *de se* markers seems to be associated with a nondescriptive setting of the origins of representational frameworks.

Representation of mental states and events in reflective self-attributions is associated with noninferential epistemic relation that is context-bound, singular, and not purely descriptive.

---

their modal properties and does not elaborate their epistemic properties, though he compares his vivid names to standard names in section XI. I want to emphasize that I do not hold that all uses of canonical names are associated with *de re* attitudes. Uses of large numerals commonly are not. The key issue concerns the immediacy, the noncomputational and noninferential character, of the individual's representational and epistemic capacity that backs use of the name. Thus I think that, normally, only uses of very small numerals yield *de re* attitudes. I believe that uses of canonical names for noncomplex representational contents and for relatively simple combinations of them are candidates for yielding *de re* attitudes. For example, representational contents of that-clauses containing obliquely occurring expressions that can be comprehended without exercise of nonmodular computation can involve *de re* representation. Here again see my "Postscript to 'Frege and the Hierarchy.' " For a fuller discussion of my particular view of *de re* thought about small natural numbers, see my "Postscript to 'Belief *De Re*.' "

75. The third and fourth types of nonempirical *de re* cases raise interesting questions about reference to the future. Many references to objects in the future do not support *de re* attitudes. Reference through complete definite descriptions is, of course, an example. Equally, names introduced in terms of context-free definite descriptions ("Newman 1 and 1/2"—introduced as referring to the first person born in 2050) are examples. The same can be said about indexically infected descriptions like "the 754,573,211,467th day after today." Such a description can support an attitude that is *de re* with respect to today, but not with respect to the 754,573,211,467th day after today. The reason is, again, not absence of a causal relation. It is that the relation to that future day is, apart from the indexical anchoring in today, *entirely* dependent on ability general representation.

Representation of intended acts or objects over which one has control seems associated with a noninferential ability to know and represent them by nondescriptive context-bound singular means.

Canonical representations of understood representational contents and certain canonical representations of simple natural numbers are candidates for *de re* status. Unlike the representations in the other cases, the relevant representations of these abstract entities are *ability general* though semantically singular. The representations are fully conceptual.[76] Such representation occurs within canonical systems of designation that do not themselves rely on context-bound forms of reference. In these respects, reference here is significantly different from other *de re* reference. Still, the canonical system of representation is, at its bases or origins, intuitively nondescriptive. The basic canonical representations are also partly backed by noninferential, noncomputational modes of reference and understanding.

I accept Frege's point that we do not know the numbers through perceptual-like apprehension of them. We know them only through understanding arithmetical propositions. Here, reference derives from propositional abilities, not from a subpropositional ability like perception. Still, comprehending the thoughts that canonically specify the smallest natural numbers through numerals is essentially linked to a noninferential representational ability—the conceptualized successor of

---

What are we to say about attitudes using applications of the indexical tomorrow? Kaplan denies attitudes *de re* status with respect to positions in which tomorrow occurs. He appears to base this denial on our lack of causal relation to future days. Cf. David Kaplan, "De Re Belief," (2003) in *Presidential Addresses of the American Philosophical Association*, ed. Richard T. Hull (forthcoming). This may signal a different conception of *de re*. From my perspective, a denial of *de re* status based on absence of a causal relation to the *re* would not be a good reason. We have seen counterexamples to this principle from other quarters. The indexical tomorrow depends for its referential workings on a relation to today. It refers to the day after today. In this respect, it is like the description of a future day that uses a huge number. On the other hand, often we can have virtually as direct an epistemic and representational relation to tomorrow as we do to today—if we are thoroughly centered on our plans for tomorrow, for example.

I believe that indexicals like tomorrow can yield states and attitudes that are *de re* with respect to future times. Their being single words suggests that no inference need be made in their application. Their being single words is not decisive, of course. One could coin a one-word indexical for the 754,573,211,467th day after today. Because most of us cannot parse or apply the number noninferentially, such an indexical could not be used to think *de re* thoughts with respect to the relevant day. What enables tomorrow sometimes to effect *de re* reference is that the day is often cognitively and practically at hand. This is partly because the day bears a numerical relation to today that itself does not require inference or counting for its application. It is partly because we have power over our acts in the immediate future. The issues again invite further reflection—on another day.

76. This point constitutes a departure from one of the lines on *de re* attitudes that I took in "Belief *De Re*." For a criticism of that line and further motivation for the line taken here, see "Postscript to 'Belief *De Re*.'"

subitizing. This is recognition and application of numbers without calculation or description. It is recognition through singular understanding.

A similar point applies to our knowledge of thought contents. We do not know them through perceptual apprehension. We know them through reflexive, meta-representational specification of what we discursively understand. The basic non-meta-representational, discursive, competence understanding is a combination of applicational ability, attributional and recognitional ability, and inference. But meta-representational understanding of a content through canonical names is not description or inference. The ability to canonically name representational contents that we have a competence-understanding of is a nondescriptive, non-inferential, nonattributional ability. And the ability to think, with understanding, about contents thus canonically named need not employ inference. Thoughts that exercise that ability are, I think, *de re*. They constitute another type of singular intellectual understanding.

The fifth thesis is:

> *A mental state or attitude is autonomously (and proleptically) de re with respect to a representational position in its representational content if and only if the representational position contains a representational content that represents (purports to refer) nondescriptively and is backed by an epistemic competence to make noninferential, immediate, nondiscursive attributions to the re.*

In sufficiently mature thinkers, exercise of this competence often constitutes knowledge. It can, however, reside in primitive, subpropositional perception or action and in framework-setting *de se* markers in perception or action sets.

I have acknowledged many issues that challenge further reflection. I hope to have indicated that understanding *de re* phenomena is a project not only in the theory of reference, let alone belief-attribution. It is a project that probes fundamental epistemic and representational capacities that underlie what it is to have a mind.