Five Theses on <u>De Re</u> States and Attitudes*

I shall propose five theses on <u>de re</u> states and attitudes. To be a <u>de re</u> 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 in effect impose limits on Russell's notion <u>acquaintance</u>. They restrict context-bound singular representation, which constitutes a prima facie mark of <u>de re</u> attitudes.

The theses are developed against a background rejection of Russellian 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 ineliminably perspectival. Against the neo-Kantian view, I believe that perception, even of physical objects, need not rely on conception. I will not discuss these alternative views here. I mention them for orientation.

The first thesis formulates the perspectival nature of representation. The second outlines categorizational resources necessary to perception-based representation that omit Russellian

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acquaintance but develop Russell's insight that singular representation begins at a primitive, pre-conceptual level. The third thesis holds that such resources are necessary for successful perception-based representation. 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 view. The fifth outlines a non-empiricist conception of de re states and attitudes. All the theses but 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 percepts, concepts, and representational contents of thought--to be the basic sorts.[1] I shall concentrate on them. I assume a distinction between perception and thought, and a companion distinction between certain components of their representational contents--perceptions and concepts. I note differences as I go, but much of what I say applies to perception and thought.

The ontology of mental representations is largely unimportant here. With caveats noted in section II, I take mental representations to be abstract representational kinds, not particulars. Individuals can share representations. Representations are ways of thinking or perceiving. So they have "intentionality" or representationality. I do not distinguish between representations and representational contents. I assume that there are representational states, capacities, and events in individuals. Representations mark or help type-identify such states, capacities, or events. I leave open whether instances of such contents, representation tokens, are in general present in mental states or events in any sense beyond the fact that state or event instances which the representation types mark are present in individuals. I leave open, for example, whether conceptual

representations are always associated with a separately specificable language of thought, whose "words" are tokens of the conceptual representations. (I do hold that any such language's syntactical tokens must be partly type-identified by representational content.) I also leave open how representational states and events, and any representation tokens, relate to neural states.

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. It helps constitute the representational perspective of an individual. Second, representations mark or help type-identify an individual's representational states, capacities, events. Thus they play a role in specifying kinds of psychological states that enter into psychological explanation. Third, representations serve as ground for the application of representational and epistemic norms. As regards representational norms, the veridicality of an individual's representational states is evaluated by reference to whether representations are correct, true, or veridical. As regards epistemic norms, an individual's warrant, rationality, and other types of cognitive "doing-well" are evaluated by reference to how his 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 or thinks about objects or properties without doing so in any particular way that constitutes some perspective on them.[2] Any view that rejected this thesis would hopelessly fail to accord with fundamental features of perception and thought.

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The thesis is to be taken in this specific sense: Every purported application, reference, and attributive act, event, or state 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.. We represent only through abilities that provide partial, incomplete, usually fallible perspectives on an actual or purported subject matter. One can have different perceptual representations from different angles of perception 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. One can represent the same property in different sense modalities. Parallel points apply to conception. Representation in both perception and thought is typed-identified to reflect representational abilities, not purely in terms of a referent. Such abilities constitute a perspective on represented objects and properties. The perspective is always partial and and usually fallible. It is answerable to standards of accuracy, well-functioning, and warrant.

I take the first thesis as axiomatic here. I believe that it is not reasonably deniable. 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, partial 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, apart from any representational means that constitutes a partial, usually fallible, perspective on them.[3] Mental representations mark or help

type-identify cognitive states, capacities, and events. To do so in ways that serve psychological explanation, mental representations must type the perspectival abilities that we in fact have.

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 sub-systems cannot be separated in empirical theory from the end-product perceptual representations attributed to the whole animal or person, as well as to psychological sub-systems.

II.

The second thesis concerns conditions on contextual singular purported reference. A traditional view is that such reference requires attributive backing that purportedly categorizes or restricts the reference, if any, to instances of a kind or type. I accept a version of this view. But I try to make it more precise. I also liberalize the view in three respects. First, the categorizations can be perceptual attributions as well as conceptual attributions in thought. Second, supplemental "backing" can be less intellectual and looser. Third, the kinds or types are more generic. Central to the view are certain notions of generality and context-dependence. Much of this long section will be taken up with explaining these notions and how they bear on contextual singular reference.

I distinguish three sorts of generality in mental representations. One is the generality that concerns the kind of ability (partly) typed-identified by the representation. It bears on whether the ability is individuated independently of any specific exercises of it. A second is the sort of 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, or whether, on the contrary, it must apply to exactly one, if to any. The third is a kind of "syntactical" or functional generality.

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The first sort of generality pertains to representation types that mark general, freely repeatable representational abilities. The abilities and the representations that mark them are not dependent for their identities on any particular set of token applications or events. They are not simply abstractions from any particular token application or event.[4] They are individuated, and may be learned or innately "wired in", through acquiring a kind or type of ability. Commonly these abilities are geared to situations or entities of a given kind or type. Such abilities may be dependent for their acquisition on being associated with some token applications or other. But if a representational type marks a general ability, in my sense, any exercise of an appropriate kind would do. There is no particular application or event, or any particular set of applications or events, to which the relevant abilities, and the representations that mark them, are essentially tied for their individuation. Individuation goes through any events of a certain type.

Perceptual representations of property- and relation types are general in this sense. So a representation marking an ability to spot red in an ordinary color-sighted way is general in this sense. A concept like piano or the tallest spy ever is general in this sense. Let us call such representations "ability-general", since they type general psychological abilities. Such abilities are freely repeatable: there are no particular token exercises or applications by reference to which the standing ability is individuated.

Ability-general representations contrast with representations that mark a token application (or applications) by some individual perceiver or thinker. I call both the act or event (and abilities individuated in terms of the act or event) and the representation an "application". Context will make clear which is meant—act, event, ability, or representation marking act, event, or ability—if the distinction is important. An application of a demonstrative construction in thought is not

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freely repeatable. The representation marking the act is <u>not</u> ability-general: There are particular occurrent acts (or events) that are essential to the individuation of act or ability that the representation marks.

A token application of a demonstrative-like construction in perception, language, or thought is to be strictly distinguished from the demonstrative construction itself. Thus a representation marking a token (act) application of the expression "that", or of the standing demonstrative mental representation <u>that</u>, is to be strictly distinguished from the expression "that" and from the standing mental representation <u>that</u>. The standing mental representation <u>that</u> is ability general. The ability to use the demonstrative "that" and the ability marked by its standing counterpart in thought (<u>that</u>) 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 <u>that</u>. By contrast, the 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--is not freely repeatable.

Applications may be acts in thought--applications of concepts. Or they may be events in perception--applications of ability-general perceptual representations to particulars. Let us call such representations that mark such acts or events <u>ability-particular</u> (or <u>context-bound</u>).

It is sometimes plausible to <u>identify</u> an application representation with a mental act or event. But ability-particular or context-bound representations--representations that mark (help type-identify) applications--need not themselves <u>be</u> 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. An ability-particular (context-bound) representation can also 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 token acts or events --not in terms of freely-repeatable general abilities.

Token singular representations in thought are actively embodied by <u>particular token applications</u> of demonstratives like <u>that</u> or indexicals like <u>I</u>, and by pronomial 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.[5]

Paradigmatic concepts are ability-general.[6] Attributive perceptual representations are ability-general. Most concepts and all perceptual representations that are ability-general are general in a further sense. Paradigmatic concepts and all perceptual representations are capable, according to their form and content, of referring to, or being true of, or being veridical of various entities. Let us call such representations "<u>semantically general</u>".[7] Most ordinary, non-complex 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. The visual perceptual attributive representation <u>square</u> is veridical of any visible square entity. A representation is <u>semantically singular</u> if its form and content require that it have exactly one referent or satisfier, if it has any.

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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. I think that the linguistic distinction has a counterpart in perception and thought: Syntactically singular representations are those that function to refer to one entity, if to any, when used in a complete sentence, thought, or perception. For present purposes, I take syntactically general representations to be those that function (usually fallibly) to be veridical of or true of one or more entities.[8] For present purposes, syntactically general representations are attributive. In thought they are paradigmatically predicative. There is an attributive analog in perception and perceptual memory.

The category of semantical generality cuts across that of syntactic generality. Some syntactically general representations, like is identical with 3, are semantically singular. As far as I can see, examples of this sort do not occur in perception. Conceptual examples tend to be syntactically complex.[9] Some syntactically singular representations such as that sofa, the only woman to hit that man, today, he, this, are semantically general, insofar as they are not applied in a context but simply lie fallow in a thinker's repertoire. Such representations can apply, by their form and 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 different referents–single referents in each context, but multiple referents relative to form and content. All these representations are in themselves ability-general as well as semantically general. The abilities that they mark are individuated independently of any particular application.

Lying unapplied, representations containing indexical or demonstrative representations are schematic. To be schematic, a representation must need a completing context-bound application

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

Schematic representations are commonly complex and contain a mix of elements.[10] Some elements (the 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, context-bound applications. Thus <u>that sofa</u> contains the demonstrative <u>that,</u> which (as unapplied) marks a general ability to exercise context-bound, singular application, and the concept <u>sofa,</u> which marks a general ability to restrict context-bound application in a context-independent way. (The concept marks inferential abilities as well.) The demonstrative <u>that,</u> unapplied, contributes the schematic element to the complex schematic representation. Such an element will be called <u>purely schematic.</u> The context-independent restricting element in the complex schematic representation (here, <u>sofa</u>) will be called <u>non-schematic.</u>

To summarize where we are so far: Examples of semantically general, ability-general representations are attributive perceptual representations like <u>edge</u> or <u>red,</u> predicative concepts like <u>red</u> or <u>piano,</u> and unapplied schematic representations that, like <u>that, that pigeon,</u> and <u>such a person.</u> Examples of semantically singular, context-bound (ability-particular) representations are token applications in perception or thought, and abstractions from such applications held in memory or passed on in interlocution.

Semantical generality and ability generality also cut across one another. A semantically general representation can be context-bound if it contains context-bound singular applications. An example is person from that city (where that city is contextually applied to a particular city). I conjecture that all such cases involve complex representations--combining token applications with semantically general, ability-general elements. There are also ability-general representations that are not semantically general. Complete definite descriptions (conceptual or linguistic) are examples: the natural number that immediately follows one, the human being alive before 2000 with the greatest rest mass, and so on. There are, I think, non-complex representations that are ability-general but semantically and syntactically singular. These are individual concepts. I believe that God and three, and perhaps Earth, are examples.[11] Like paradigmatic semantically general concepts, these individual concepts mark freely repeatable psychological abilities. Having the concept is an ability that is not individuated by reference to specific token acts or events. It is individuated by a cluster of inferential, applicational, and predicational abilities. These abilities may, of course, be partly individuated in terms of relations to a subject matter. But no particular representational events of application are essential.

I believe that in perception all ability-general representations are semantically general: Semantically-singular, ability-general mental representations occur only in thought. The reason is that the perceptual system cannot specify or refer to particulars in a context-free way. All reference to particulars by perceptions is by way of context-bound representation.

An ability-particular (context-bound) representation can fail to be semantically singular. Examples are complex predications containing applied schematic representations. Perhaps there are also pluralized context-bound acts of application--a multiplex act in perception or thought that

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applies a schematic representation like those. I focus on context-bound singular applications.[12]

The range of entities that context-bound (ability-particular) representations can apply to is, I think, very wide. I shall, however, concentrate entirely on their applications to particulars—which is what paradigmatic de re states and attitudes apply to. The particulars may be property- or relation-instances, as well as individuals such as physical objects or events.

The first thesis holds that all representation is perspectival, representation-as. The second presupposes the first, but makes a more detailed claim: Each context-bound (ability-particular), semantically singular representational element—other than ego-centric indexing elements--in every autonomous, perceptually based, complete propositional thought and in every perception must be associated with a non-schematic attributive representation that is semantically general and ability-general, and that guides the singular representation.

The key terms will be explained. But let me rephrase the thesis, relying on an intuitive understanding of them. Each context-bound singular representation, other than ego-centric framework-indexing elements, must be guided by some general typing or categorizing of the entities purportedly referred to. The thesis holds that with the exception of ego-centric markers, every context-bound singular representation must be supplemented by an attributive non-schematic representation that is both semantically general and ability-general and that purports (functions fallibly) to restrict its referent.

The main idea of the second thesis is that singular perception-based purported reference must be backed by general attributive representational ability—an ability to categorize referred-to particulars as instances of a type or kind. The point of the thesis is to illuminate this main idea, an old one, by stating some minimal necessary conditions on relevant attributive categorization.

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I take the notions of <u>kind</u>, <u>type</u>, and <u>categorization</u>–which will occur in the explication of the notion of <u>guidance</u>–as primitive. I will say more about them later.

I take the notion <u>attributive</u> as primitive. I take it that the function of attributive representations is to attribute kinds, properties or relations to particulars or to other entities. All attributive representations are syntactically general. I believe that non-complex attributive mental representations may always be ability-general.[13]

In thought, non-complex attributive representations are predicative concepts. I assume as obvious that all thoughts contain some predicative concept.

In perception, attributive presentations are general elements that type purportedly perceived particulars, either by categorizing them or by attributing properties or relations to them. Thus we might perceive a particular individual thing as a body, or as red. Or one might perceive an instance of red as red. Or one might perceive individual things as being in the relation of one larger than the other. Or one might perceive an instance of the relation of being next-to. The representation of the <u>particular</u> can be a representation of an individual object or event, or a representation of a property instance or relation instance. But insofar as a particular or a group of particulars are perceived or purportedly perceived, perception will attribute to the particular a kind, or a property, or a relation. The second thesis requires that some such attribution be categorizing, with respect to the particular purportedly perceived. Thus, a property-instance or relation-instance can be categorized as an instance of that property or relation. Categorization of individual objects or events is more restrictive and must, in some very generic sense, sort the individuals. I will leave somewhat open exactly what counts as a perceptual categorization of particulars that are individual objects or events. I believe that all perception contains such

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attributive--and, more specially, categorizing--elements.[14]

The second thesis holds that a perception-based, context-bound, singular representation can purport to refer only insofar as it is used under an attributive restriction on or categorization of the kind or type of entity that it purports to refer to. The thesis further holds that such a representation can purport to refer only insofar as its use flows from a general ability to represent those kinds or types. The notions non-schematic, ability-general, and semantically general restrict what it is to attribute a kind or type.

The thesis is quite a bit 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 backed 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 the next sixteen paragraphs, and return to the argument that I give for that part of the thesis that specifically concerns perception.[15]

Let me explain the remaining special terms in the thesis.

The thesis is stated for perceptually based representation. To be perceptually based is to be a representation in a perception or perceptual memory that purports to represent a perceived entity, or an empirical representation in a thought. De se representations in perception or thought and mathematical representations in thought are examples of representations that are excluded.

I believe that the second thesis (and the third) can be broadened beyond perceptually based, context-bound singular reference. It could include certain sorts of reference to one's psychological events and mathematical reference. I will discuss such cases in section V, but will not specifically re-formulate the thesis to deal with them.

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A semantically general, ability-general representation guides a context-bound singular representation if, according to the representational content of the individual's overall representational perspective, the purported referent of the singular representation satisfies the semantically general, ability-general representation; and this representation is used by the individual or his representational system as an important restriction on the singular representation's purported referent. Guidance puts a purported restriction on the kind of entity purportedly referred to.[16] It categorizes. The semantically general and ability-general representations that guide singular purported-reference can be perceptual or conceptual.[17]

Kinds or types enter into successful explanations of context-bound acts of reference, both purported and successful. I assume that called "Bill" , perceived at some time, and grue are not kinds or types. I assume also that relations are not kinds or types of individuals or of properties. Relations can be kinds or types of relation instances. Thus a perception of a relation instance can be categorized as being of a relation type or relation kind. But an individual or property instance cannot be categorized merely by relations it is perceived as being in. (I leave open whether to perceive a relation, one must perceive an entity in the relation.) Similarly, properties can be kinds or types of their property instances (which may be perceived). I believe that ordinary properties like redness and rough-texturedness cannot count as the guiding categorizing type for reference to an individual physical object or event. But I do not try to work out a definite notion of categorization, kind, type, or sort for individuals here.

The guiding representations are non-schematic: They mark a general representational ability to place restrictions on applications in a way that is independent of the context of the applications. They are not schematic elements (like the purely schematic that) that by their form

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require a completing application to have a definite referent or satisfier in a perception or complete thought. They may be contained in a schematic representation. But their contribution is purported context-independent restriction of the type of entity that can be a referent.

The notions <u>non-schematic</u> and <u>ability-general</u> help articulate an intuition that representation in perception and in perceptual thought is <u>objective</u>. The relevant objectivity concerns independence of perspective from a particular context and from particular token acts or events. It is the objectivity that is associated with (relative) non-parochiality of perspective.

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

I make <u>de se</u> or ego-centric indexes exceptions in the second thesis.[18] Their references need not be guided by further representations. Their references are held in place by their roles and use in a system. <u>De se</u> markers or ego-centric indexes are indexical representations that meet two conditions. When applied, they indicate an origin for a representational framework, such as a spatial on the perceiver's body, or the present time. They also mark the origin as of immediate ego-significance for motivation. The second thesis does not require that applications of such markers to entities (e.g. places and egos) on particular occasions be <u>guided</u> by general elements. But singular applications of them on particular contextual occasions are not unrestricted, or applied atomistically or "bare" either.

Applications of <u>de se</u> or ego-centric markers are restricted by their position in the whole framework of spatial co-ordinates and semantically general relational spatial representations that they provide origins for. They could be regarded as a special case of a more general reciprocal dependence of context-bound, semantically singular representations on semantically general,

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ability-general, non-schematic attributions. But in formulating the second thesis, I want to make explicit the specialness of the case or de se or ego-centric markers.

There is an issue here that attaches both to de se markers and to more sophisticated indexicals, and even demonstratives, in thought. Recall that I in effect defined a not-purely-schematic representation as one that contains a non-schematic representation. Syntactic containment is clear in the case of explicitly complex representations (that sofa). But what of more implicit cases? Most demonstrative pronouns and most indexicals seem to involve (contain) some schematic/non-schematic mixture. Thus she is restricted to females. Now and there are restricted to times and places, respectively. Today is restricted to days. Does today contain day? Does now contain time, or at least some restricter to times of what now applies to? I think so. Are applications of today in particular contexts guided by a semantically general, ability-general, non-schematic representation day? I think so.

There seems to be some analog between such restrictive elements in ordinary indexicals and restricting elements (like ego or place) in de se or ego-centric 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 non-schematic restricting concepts contained in the conceptual indexicals and ordinary demonstratives in thought seems to have a significantly different role from that of the restriction that goes on by the non-schematic restricting elements in de se markers. Guidance by non-schematic restricting that are the objects of perception also seems different from the sort of restriction that is contained in de se markers in perception. It is not that there is less restriction. The difference seems to lie in the role or type of the restriction. Although a

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semantical restriction goes on in de se or ego-centric markers, I am not clear that it should be assimilated to guidance.

One does not perceive or think about the entities (the self or the place) that are marked by de se or ego-centric markers. There is no scope for brute illusion or error. Application of such markers seems fundamental in setting 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. As I have emphasized, even with ego-centric or de se markers in perception, there is a need for some semantically general, ability-general, non-schematic 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 notion association is the most complex of those in the second thesis. What is packed into supposing that each context-bound singular representation must be associated with some non-schematic, semantically general, ability-general representation?

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 simultaneous 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

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different elements of representational content interconnect psychologically. In an occurrence of the thought that pigeon sees the kernal, 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 in perception. I believe that every perceptual representation must either be, or be accompanied by, or contain, some non-schematic, semantically general, ability-general perceptual representation. Perceptual representations commonly contain a multitude of such general representations. In a visual perception of an object, one part represents the object's left side; another part represents the center of the object; another aspect of the percept represents the color at a certain place on the object's surface. Note that both the particular side and its representation as being to the left are represented in one component of the complex perception. 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

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exercise of a general perceptual ability (the exercise of the ability marked by side) occur together

and are mutually dependent. The "grammatical" accompaniment will also mark 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 non-schematic, semantically general, ability-general

perceptual representation(s). I will not defend here the view that perceptual content has this

quasi-grammatical organization. I believe that the view has some plausibility and that it is

certainly made use of in perceptual psychology.

Constraints on associations between singular, applicational 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

guided only by, a general perceptual or perceptual-memory representation rather than a concept-

ual qualifier. An individual could perhaps think thoughts containing singular, referential elements

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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.[19]

So 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 general perceptual representation. Or 2) the singular representation is a component of a representational thought content; and (a) it is accompanied by a general conceptual representation; 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 general perceptual representation in the same thinker. In all these cases, the second thesis holds that the singular representation must be associated with a non-schematic, attributive, semantically general, ability-general representation, somewhere in the thinker's point of view, that guides. The association with a guiding representation of this sort 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 singular reference must be backed by attributive, general representations which type-identify aspects or kinds of particulars referred to. I want to give an argument that explains why singular elements in perception must be

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accompanied by and guided by general elements–non-schematic, ability-general, semantically general representations. Perceptually based singular representations in thought and perceptual memory depend on such elements in perception, and carry analogous requirements.

Here is an argument for a restricted version of the second thesis. It is an argument for the thesis as applied to <u>perceptual</u> context-bound, semantically singular representation, (excluding <u>de se</u> framework markers). Such 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.

<u>Restricted 2nd Thesis: Any context-bound, semantically singular perceptual representation that is not an ego-centric indexing element must be accompanied by and guided by a non-schematic, attributive, ability-general, semantically general representation</u>.

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

To be or to be part of an exercise of a perceptual <u>ability</u>, an occurrence of a context-bound singular element S in a perception must be part of an instantiation of a <u>general pattern</u> of perceptual response. The response is triggered by proximal stimulation. It is fundamental to psychological explanation in perceptual psychology that given the perceptual abilities and antecedent psychological setting of the psychological system (type-identified partly in terms of

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general patterns of relations to distal stimuli), any given type of proximal stimulation would produce the same general pattern of perceptual response. In cases of successful perception, the response discriminates entities that are distal 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 be the exercise of 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 "G".

Individuals through their perceptual systems perceive particulars by representing 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. 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—in successful cases, from a type of distal stimulus. It must be so explainable if perception is to be subject to general explanatory principles. The representational identity of the perceptual response-type is not independent of the types of stimuli which produce it. So the ability that the response-type constitutes is freely repeatable. So G is

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ability-general. The ability-generality of G is thus grounded in both the nature of a perceptual ability and the methods of explanation in perceptual psychology.[20]

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 a perceptual ability depend on distal causal relations to the subject matter, G is semantically general. If G can refer to or be veridical of a given particular, it could refer to or be veridical of a different 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 individuals of a certain kind.

The relevant type of successful application of G is veridicality, 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. 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) which marks the system's capacity to discriminate context-independent aspects of the environment is attributive rather than referential. G's role is to help perception– representations like S in perception--indicate particulars as being of certain types or as having certain repeatable aspects.[21]

Again, we 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

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aspects of them that it can discriminate in the context. This pattern of inter-dependence 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 <u>accompanies or accompany</u> the singular representation S. (We could take the representation to be a sub-set of G. But I think that the argument is not compromised if we identify them with G.)

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 purported aspects of that referent. G must type-identify an ability to respond to such discriminable aspects of the environment. Purely schematic representations place no restriction on the entities being perceived. They cannot mark what is specific to the perceptual system's discriminative response. If S were backed purely by a purely demonstrative ability marked by <u>this</u>, the ability would not be a specific discriminative response to any of the numerous proximal and distal particulars, or kinds of particulars, in any given causal chain from the environment to the sensory receptors. Such a <u>this</u> would not mark an ability that was specific to the perceived distal particular, even in the context. For the <u>this</u> would mark an ability that was equally specific to the array of proximal stimulation, the distal peceived entity, the entity's surface, any of its various properties, (for vision) the light 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 specific and repeatable. It must specify some purported aspect of the perceived entity. So G is not purely schematic. Only restrictive, non-schematic aspects of impure schematic

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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 non-schematic.

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 categorization or kind-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 a categorization. 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 categorization that some property in the same range is attributed. So one could perceive an instance of red purely as red or as orange, but not purely as flat or as an edge or even as a smell. What funds this intuition?

A perceptual system, or a perceiver, must have abilities to discriminate particulars by way of types of kinds that the particular instantiates. The system, or perceiver, must also be able to discriminate those types or kinds. I believe that the key underlying principle that informs the

search for guiding types or kinds 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 kinds that are in the same environment.

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 categorization of individuals, such as physical objects and events. Following our conjectured principle: The perceptual system must attribute kinds that under the normal standard-making 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 physical objects 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 physical objects apart from any aspects of them. There is no perceptually discriminable kind physical object that is perceptually identifiable independently of some aspects of physical objects. 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.

I believe, on empirical grounds, that it is mistaken to require resistance to touch as a necessary supplement to certain trackable shapes if visual-perceptual responses are to discriminate instances of the kind physical object. I think that some generic type of volume that is discriminable from background and stable enough to track is the key feature that triggers perceptual categorization of something as a physical 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 physical objects must somehow be distinguished from the instance of the object. And it is inevitable that for any generic three-dimensional shape that correlates with physical objects, the shape and the object cannot be perceptually discriminated in a given case.

I think that the distinction lies in the function that physical-object representation has in the representational and practical economy of the perceiver. A perceptual representation of a particular as a physical object, as opposed to a generic shape that is the perceptual mark of a physical object, 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 physical objects (and only a contingent aspect of the ability to discriminate the relevant shapes that one uses to discriminate physical objects) that the perceived entity be trackable over time. A physical-object representation is also essentially connected to practical functions such as eating, mating, fleeing, avoiding collisions in ways that the shape representation is not. The association of these functions with perception can ground explanations that take both guiding physical-object representations and whatever (also commonly, guiding)

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generic shape representations on which guiding physical-object representations are necessarily parasitic, to co-exist in a perceptual system, and yet to be distinct. It is necessary to the physical-object representation but not the shape representation that its application be associated with an ability to track the object, bind it with other property-representations, and connect it immediately with certain practical functions.[22] But the physical object representation is representationally 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 must supplement perceptual representations for the distinction to have empirical application. This is a complex matter, not to be argued here.

This line of reflection suggests that guidance is in terms of categorizations that provide an explanatory ground for distinguishing successful perception of particulars of a given kind from particulars of other kinds which are also present in the environment. The ground may lie only in perceptual discrimination or also in functional differences in the abilities marked by the representations. A full account of categorization must rely on empirical details of particular cases.

I have argued that any context-bound, semantically singular perceptual representation that is not an ego-centric indexing element must be accompanied by and guided by a non-schematic, attributive, ability-general, semantically general representation.[23] The argument is meant not only to support but to clarify this conclusion. There remains considerable room for deepening and refining this argument.

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 of "object" or "entity" as sufficient to guide

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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.

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

Now to the first of the three more general observations. The second thesis is incompatible with holding that a perceptual context-bound singular representation can fail to be guided by a non-schematic general representation. For example, a sensation or a neural disturbance does not suffice to recruit a singular perceptual demonstrative.[24]

It is, of course, an empirical matter whether any given system is a perceptual system. But 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 referential inspecificity. 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 those representations are to be explained.[25] Such explanation must explain responses to stimulations by attributing perceptual competencies to get things right. Neither sensational nor neural kinds are kinds in terms of which such explanation can be fully given. They are representationally too inspecific. Sensations and neural disturbances cannot in themselves supplement applications of singular perceptual demonstratives to explain perceptual ability, perceptual reference and veridicality, or perceptual error.[26]

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The lack of referential specificity of purely schematic or purely singular representations forces guidance by non-schematic, semantically general representations. The lack of referential specificity (indeed lack of representational content) of sensation and of neural kinds per se also forces guidance. The requirement underlies the fact that perception--both singular and general perceptual representation--has conditions for success in 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 kinds and has given properties. Other particulars of other kinds 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 a multitude of kinds of particulars that are necessary parts of this pattern but which 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 would produce the same type of sensation or same type of neural disturbance in the brain. Any instance would be equally explanatorily related to an application of a purely schematic perceptual representation (analogous to that). To explain what aspects of the particular are purportedly perceived, one must explain the system's response in terms of representational kinds and underlying abilities that are specific to those aspects. Kinds of sensations or neural events per se can play a role in explaining non-perceptual, sensory responses to the environment. They obviously play some role even in the full

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explanation and understanding of perception. But they do not mark acts or abilities that are specific enough to mark 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) <u>perceptual</u> context-bound singular representation, perceptual psychology must relate the perceptual response to discriminable aspects of particulars. The perceptual 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) perceptions. Such aspects will help type-identify non-schematic, semantically general representational kinds that mark conditions of veridicality.

The <u>second general observation on the second thesis</u> concerns not the general guiding element in perception, but the singular element. Representational contents of perceptions and propositional attitudes mark both individuals' perspectival abilities, or exercises of abilities, and the conditions 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 the function is veridicality. Perceptions–both the states and the contents that mark them–are veridical when successful. The specification of representational content of a perception should specify a condition that when fulfilled is veridical, not merely veridical of. So in specifying the representational content of a perceptual state, one must specify some element that, when successful, picks out a particular and an element that when successful attributes a general

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feature to that particular.

There are duplicates which 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 successively, without the perceiver's discriminating the two. Something in the exercise of the perceptual ability must be special to the particular that is actually perceived. There is no freely repeatable perceptual capacity that distinguishes one particular from another. 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 to them general features. Belief is fundamental to all propositional attitudes, in that all others 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. 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. So in specifying a representational content of a propositional attitude that about a particular, one must

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specify some element that, when successful, picks out a particular and an element that when successful attributes a general feature to that particular.

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.

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

It is hard to over-emphasize the significance of these points in evaluating theories of propositional attitudes. Many neo-Russellian accounts, originally developed to account for linguistic meaning, rest satisfied with a propositional "content" that is not fully representational. They incoporate particulars as constituents in the "proposition" that is thought. I find such "propositions" artificial, but otherwise innocuous. But I think that the foregoing considerations

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show that such approaches cannot provide a full account of thought. A full specification of a perception or a propositional attitude must take it to represent and pick out particulars that it is about. The perspective on the particular includes the fallible occurrent exercise of an ability-general, syntactically singular ability—an application. Thoughts and perceptions are exercises of perspectival abilities that are true (false) or veridical (non-veridical)—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 perspectivally. 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 element is a token singular representation that marks a singular application of a general representation. The singular token 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 that is an exercise of a representational ability and that is causally connected in an appropriate way to 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 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.

Let me turn to a third general observation on the second thesis. Most philosophers who have addressed these topics would accept the second thesis. Most such philosophers impose

stronger, though perhaps less specific, requirements on guidance than it does. It is common to require that a capacity for perceptual singular reference be guided by a large range of conceptual abilities. 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.

The second thesis does not require that perceptual representation of particulars be guided by ordinary sortals. In the first place, 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.[27] In fact, the thesis also does not require perception to be guided by any concepts at all--not sortals, not causal concepts, not concepts of oneself and one's place in place, not quantification or identity. It does not require that most information coming from the referent be veridical. I think that all the traditional, more restrictive accounts are mistaken in requiring that perception of physical objects be backed by concepts 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.[28]

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

In requiring that singular perceptual representation be guided by a 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 make-up will allow him to be sensitive to. At the level of thought, some types (for example, pianos) have a cultural basis. All have a repeatable character and an independence from particular representational events that makes general law-like explanation of connection-with-the-world possible.

In requiring that singular perceptual representation be backed 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 perception-based representation, the guiding representations are attributive. They are–when successfully applied--veridical of or true of instances, rather than simply names of types.

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

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III

All reference in thought or perception must occur within a logical conceptual structure or a topological perceptual structure, which type-identifies a network of representational abilities. This is fundamental to psychological explanation as well as to a reasonable epistemology.

Perceptual representation must also fit any given perceived entity into a wider complex of simultaneously perceived entities and relate it to an array of other perceptual parameters, for example, a spatial or a temporal array. Perceptual reference must be fixed by a combination of causal relations and a network of representational abilities. Causal relations or other "external relations" alone cannot fix any perceptual reference.

Representation in thought must fit into a logical or grammatical form. It must bear relations to other elements in thought. These elements type representational abilities–abilities to predicate, abilities to group the referent as an instance of some kind or type, abilities to make inferences. No reference in thought could be established if it were not embedded in a representational network. The third thesis presupposes these points, and makes a further claim.

The third thesis is: <u>Laying applications of ego-centric indexes aside, if an autonomously used, perceptually based, context-bound singular representation is to have a referent in perception or thought, the singular representation must be guided by some empirically committal, non-schematic, attributive, semantically general, ability-general representation that is in fact veridical of the referent</u>. The thesis maintains a minimum role for <u>veridical general representation</u> in determining successful reference by perceptually based singular representation.

A <u>perceptually based</u> representation is a perception or an empirical thought.

To be <u>empirically committal</u> is for a representation to depend for its content and the

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warrant for its application on perception. So <u>is self-identical</u> or <u>is one in number</u> are not empirically committal. The thesis holds that for perceptually based, singular reference to be successful, the singular element must be guided by an empirically committal general representation that is <u>veridical of</u> 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. Donnellan provided cases that are easily extrapolated to show that no explicitly applied linguistic predicate must be true of the referent.[29] 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 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 toy behind one--where one's sight is guided by a prism one is unaware of--even if one perceives it as a brown rat 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 <u>need</u> uniquely fix the referent of a context-bound singular representation by being true of or veridical of that referent.[30] In many cases, no general representations in the individual's repertoire <u>can</u> uniquely fix the referent by being veridical of it. This background point applies both to singular reference in thought and to singular perceptual representation. The point has been well made elsewhere for thought. Perception can clearly pick

out particulars even though indiscernible look-alikes might be, or even are, present elsewhere.

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.[31] Can singular representation can succeed, even though no guiding general representation applies veridically to the referent? The third thesis maintains a negative answer.

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 superordinate 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 find that intuitions vary. But I see no sound theoretical basis for such denial.[32]

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 categorizing capacity 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

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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 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.

There are, however, limits on how mistaken a perception can be while still having a perceptual referent. I conjecture 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 mis-perceived. But if the object is seen, its 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 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 objects. The light is not a flash with a shape that is a deformation of the shape represented, nor is it a

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hologram. Then I think neither the light nor the dispersed particles are perceptual referents, with mis-perceived 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.

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 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.

This does not mean 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 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.

I would like to sketch an argument that explains the truth of the third thesis. I shall again concentrate on specifically perceptual representation.

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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.[33] 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 physical object, 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".[34]

Some proper subset of P is of psychological significance. For example, indiscernible components of E may be causally relevant but psychologically irrelevant. The aspects that are psychologically 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

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particular by perceptually discriminating some of its properties or aspects.[35] 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 or aspect-instances that causally

affect the perceptual system, but which are psychologically irrelevant.

By the argument for the second thesis, perceptual responses by the perceptual system must

be type-identified in terms of non-schematic, 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 explainable in terms of a

response by the perceptual system to the causal effect of those properties--a response type-

identified by a non-schematic, attributive, semantically general, ability general representation--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 properties 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

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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" 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 which 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, particular shape are mis-perceived, 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 categorizing 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.

There is 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 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 successful perceptual reference. In particular, it seems implausible to presume that the perceptual system has as abstract a representation as 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 category, a representation available to the perceptual system itself. Sub-human primates and young children probably lack any counterpart concept, even though they incorporate their perceptual representations into a belief system.

So the point is 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 non-veridical categorizations 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 empirical 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.[36] 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 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.

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.[37] But an individual who 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.[38]

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 perception-based representation. The third thesis is about conditions on successful,

context-bound, singular, perception-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 fixing content, 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 not only context-bound singular reference but application of empirical,

semantically general, ability general concepts and percepts are almost never fixed by definitional

or inferential relations among concepts. Such reference is partly dependent on non-representational (for example, causal) relations to the environment. In view of this fact, one might conjecture that nothing can be known apriori of objects of singular de re reference in the physical environment, and that nothing can be known apriori in using empirical concepts--beyond logical and mathematical truths involving them inessentially. One might deny that one could know apriori such conditionals as if that [perceptually presented as a physical 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.[39]

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 perception-based de re states and attitudes, involving context-bound singular representations, can yield or be apriori warranted beliefs that are not parasitic on purely logical and 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.[40]

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 physical 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 physical body] exists, then it is spatially located in the environment is apriori knowable. Suppose that the individual does not cancel the default

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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 belief. Belief in such truths can be warranted by reflection on limitative principles governing perceptual reference.

These truths are non-logical, non-mathematical apriori truths about perceived objects. I shall first broach the sense in which they are non-logical or synthetic. This sense will suggest why they are non-mathematical 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 physical 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.[41] Thus in the perception-based thought, that brown oblong body is brown and oblong, one can perceive and think about a physical body indicated 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 perception-based attribution in thought) alone that the perceived object has the perceptually attributed properties.

In the third thesis, I held that perception-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 applicable to objects of visual perception, in the absence of

an explicit cancellation of a default presumption that underlies visual perception. 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 perception-based attributives in their roles in purporting to restricting perception of particulars. Some perceptual attributives that guide singular elements in perception, or that are presupposed by perception, must be veridical of the perceived particular if perceptual reference is to succeed. Other perceptual attributives accompanying the singular elements need not be veridical of the referent.

For example, with respect to a purported perception-based reference to a physical body, (something like) integral three-dimensional form must be veridically attributed in perception to the perceived body if perception-based reference to a physical 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 physical body is perceived. Similarly, more or less uniformly colored must be veridical of a perceived color instance, if a perception-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?

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There is, I think, a certain 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 <u>and</u> 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, which are not logical truths. These thoughts can perhaps be elicited by this formulation:

> (EC) If that physical body [perceptually presented as brown and oblong] 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 <u>empirically</u> 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 physical body's being perceived 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 physical body] exists, it is trackable, integral, three-dimensional.
>
> (AC') If that color instance [perceptually presented as 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 cancelled] exists, then it is spatially located.[42]

Here the connection between successful perception and the guiding attributive (in the first two examples) or the presupposed attributive (in the third example) need not be known empirically. 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 entity and the veridicality of the basic attributive as applied to the entity go together. Warrant for belief in the conditional comes as a non-empirical package.

The connections between the entities' existence and their having the relevant attributed features can be known non-empirically (AC)-(AC''). This is because the connections are epistemically relevant conditions on successful perception. Warranted connection between the perception-based attributives and the application of the perception-based demonstratives is a condition on warranted application of the perception-based demonstratives. So warrant for perceptual applications–for perceptually warranted perception-based thought–presupposes warranted connection between those applications and the relevant guiding (or presupposed) attributions. The connections derive from conditions on veridical perception itself.[43] So the empirical warrant involved in perception-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)-(AC'') make commitments to the relevant connection, belief in them is warranted non-empirically.

Thus the basic limitative principles on perceptual reference yield apriori knowledge. The

thoughts that connect the referents of perception-based demonstratives with the properties attributed by the basic restricters on singular perceptual reference can be known apriori. In these cases, one can infer apriori from the success of one's perception of an object and the nature of the perceptual attribution (or perception-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. The logical forms of (EC) and (AC)-(AC'') are relevantly the same. Thoughts expressed by (AC)-(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)-(AC'') is reflection on the nature of perceptual reference, not on general logical principles. In this sense, truths like those expressed by (AC)-(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 perception-based predicative concepts involved, and on the limits on perceptual reference. The most general principles limiting perceptual reference are associated with non-logical, non-mathematical truths that we know with apriori warrant.

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

I believe that some of the apriori warranted knowledge that resides in the limitative principles is available to such armchair reflection. The requirement that perceived physical bodies

be trackable seems to me to derive from reflection on the need to distinguish physical-body representations from event representations and from the key representations that guide physical-body representations by applying to relevant spatial forms. Similarly, the requirement that visually perceived particulars (whether these be physical bodies, color-instances, shape-instances) be located in space derives from reflection on the nature and function of visual perception.

On the other hand, some of the 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 <u>warranted</u> through empirical investigation. It is to say that it is available only through empirical investigation. Even armchair apriori knowledge is probably available only through broad, widely shared empirical experience, which gives one the conceptual wherewithal to recognize apriori principles. Some apriori knowledge can be elicited only through empirical experience that is more pointed and specialized than the experience easily available to everyone.

This situation is implicit in the difficulty we have in specifying <u>exactly</u> 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 less connected"–or the restriction on color reference that I gestured at in the phrase "more or less uniform"? Indeed, recognition that <u>physical body</u> 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 27.) So empirical investigation is important in bringing to explicit consciousness, and explicit conceptualization, the relevant representations used by perceptual systems. 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 perception-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 which 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.[44]

I conjecture a positive answer. I think that most empirical concepts are associated with superordinate concepts that provide 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.[45]

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. Our conception of the taxonomic arrangement of genus and species is vastly more fluid and empirically sensitive than it was 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 our empirical representational promises to be both difficult and rewarding.

V.

The <u>de re</u> - <u>de dicto</u> distinction reaches far back into philosophical tradition. Much of this tradition concerns modality. Some of it concerns representational states. Modern discussion of <u>de re</u> states and attitudes stems from reconsidering Russell's notion of acquaintance.[46] In "Quantifiers and Propositional Attitudes" (1955) Quine made a show of reviving 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.[47]

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 "<u>en rapport</u>" representational relation between the cognitive subject's beliefs and some <u>re</u>.[48] Kaplan avoided Russell's untenable epistemology and philosophy of mind. He sought a relation underlying Russell's intuitions but grounded in everyday considerations. Kaplan was guided both by <u>linguistic phenomena</u> associated with quantification into contexts of belief attribution, and by <u>cognitive paradigms</u> 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 initiative in exploring epistemic intuitions about cognitive states that go beyond conceptualization or description. Kaplan's paper revitalized the topic.

In "Belief <u>De Re</u>" (1977), I criticized some theses of Kaplan's paper, and noted some ways that linguistic focus blurred a clear view of the epistemic basis for the distinction.[49] I centered the account more on epistemic considerations. That paper is the basis for the reflections in the present work. But I, too, leaned excessively on linguistic phenomena.

Although nearly everyone, from Russell onward, took perception as the paradigm of de re phenomena, most conceived 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 distinction 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 non-schematic, semantically general, ability-general representations.

When we visually represent a scene, the visual system contributes ability-general representations that attribute properties and relations. These representations cannot be all there is to perceptual representation. If 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 whatever causes this representation. (Cf. note 37.) 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 scene in front of it.[50]

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 involves their being partly type-identified by context-bound singular representations (applications) that do not rely purely on non-schematic, semantically general or ability-general representations 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

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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?[51] 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.

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 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 that I shall not go into in detail here.[52] 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

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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. Most 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.[53] 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 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_.

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 called _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 which are not empirically based and not dependent on causation in the same way that perception is.

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.[54] 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.

One type involves uses of simple indexicals in thought. My occurrent thought that I am speaking 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 speaking. But referential and epistemic access to myself need not rely on empirical means. I may have already identified myself through my intention to begin speaking. If the empirical information I had about myself were mistaken (and I were not speaking at all), 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.[55]

I think that similar points can be made for normal uses of now, and some occurrences of here, in thought. A thought that 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 through perception of other things. It is fixed by context-bound application of the schematic concept now.

Reference through such indexicals is certainly not purely descriptive. Context-bound singular application is necessary. Our epistemic access to ourselves, to the present time, and often to the present place, through indexicals 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 ego-centrically oriented systems of action, and general temporal, and spatial abilities. But 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. Animals that lack propositional attitudes have perceptual systems and activities geared to their perceptions. Ego-centric 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 ego-centric indexes. These are primitive analogs of the conceptual indexicals, I, now, and here. These indexes indicate 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, even in perception, hence all representation, presupposes that these direct, non-inferential, non-descriptive links are in place.[56]

A second category 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 of hearing Rubinstein play Chopin's Third Scherzo might be based on

the belief's being caused by the original experience.

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 I am hereby thinking that music is valuable there are non-causal 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 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. There is no perception of it. 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 authoring 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.[57] 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 is no marriage. Intentional control over the future can yield not-purely-descriptive, non-inferential 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 non-inferential cognitive relations to

future entities that are under reliable intentional 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 category of non-causal 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 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 ascribes it. When I think that 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 singular term, the that-clause.[58] 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 non-inferential, 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.[59]

Canonical specification of simple natural numbers through numerals is also arguably de re. (I assume a realist attitude toward the numbers. Anti-realists can 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 non-mathematical 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 words or non-complex 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 is widely studied in cognitive psychology under the rubric subitizing.[60] In fact, perceptual subitizing is common throughout the animal kingdom. Of course, the perceptual system computes, but these computations are modular. The individual's non-inferential 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 non-inferential, non-computational numerical assignments in thought to small groupings. These assignments are associated with non-inferential 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 non-inferential 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 (non-computational) representation of numbers in calculations in pure, non-applied arithmetic. I conjecture that it is reasonable to count representation of mathematical objects that is backed by such non-inferential abilities of application and understanding as de re with respect to those objects.[61]

What can be immediately, non-inferentially 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.[62]

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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 non-descriptive, non-inferential, 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 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 or purely descriptive representations. All are backed by epistemic

capacities that are non-inferential, immediate, non-discursive.

Representation with certain indexicals and de se markers seems to be associated with a

non-descriptive setting of the origins of representational frameworks.

Representation of mental states and events in reflective self-attributions is associated with

non-inferential epistemic relation that is context-bound, singular, and not purely descriptive.

Representation of intended acts or objects over which one has control seems associated

with a non-inferential ability to know and represent them by non-descriptive 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. 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 non-descriptive. The basic canonical representations are backed by non-inferential,

non-computational 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. Reference derives from propositional abilities, not from a sub-propositional ability like perception. Still, comprehending thoughts that canonically specify the smallest natural numbers through numerals is essentially linked to a non-inferential representational ability–the conceptualized successor of subitizing. This is recognition and application of numbers without calculation.

A similar point applies to our knowledge of thought contents. We do not know them through perceptual apprehension. We know them through reflection on our discursive understanding of them. Understanding is a combination of applicational ability, categorizational ability, and inference. But understanding of a content is not a description or an inference. The ability to canonically name contents that we understand is a non-descriptive, non-inferential ability. And the ability to think about contents thus canonically named need not employ inference.

The fifth thesis is: <u>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 representation that represents (purports to refer) non-descriptively and is backed by an epistemic competence to make non-inferential, immediate, non-discursive attributions to the re</u>. In sufficiently mature thinkers, exercise of this competence often constitutes knowledge. It can, however, reside in primitive, sub-propositional perception or action, and in framework-setting <u>de se</u> indexes in perception or action sets.

I have acknowledged many issues that challenge further reflection. I hope to have indicated that understanding <u>de re</u> 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.

Tyler Burge
4/2004

FOOTNOTES

* The first four sections of this paper are based on sections IV-VI of "Descartes and Anti-Individualism: Reply to Normore" in <u>Reflections and Replies: Essays on the Philosophy of Tyler Burge</u>, Hahn and Ramberg eds. (Cambridge, Massachusetts, MIT Press, 2003). The counterparts of those sections in the present paper involve very considerable development, correction, and elaboration of the earlier work. Here I also abstract from any supposed relation to Descartes. The arguments for the second and third theses are also new. I have replaced the term "formally general", which occurred in the earlier paper, by "semantically general" here. Section V is entirely new. The paper has benefitted from comments at Syracuse University and Princeton University, especially one by Daniel Nolan. I have also benefitted from discussion with Louis DeRosset and Luca Struble.

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 <u>Subject, Thought, and Context</u>, McDowell and Pettit, eds., (New York: Oxford University Press, 1986). Also see "Perceptual Entitlement", <u>Philosophy and Phenomenological Research</u>, vol. 67 (2003), pp. 503-548. I shall discuss the distinction in future work.

2. This thesis is similar to Kaplan's slogan "No mentation without representation". Since I do not know whether "mentation" is supposed to include all mental phenomena, I do not know whether I accept his slogan. (If it does, I do not; I believe that there are qualitative mental phenomena that are not representational.) I have held my view independently for as long as I can remember. Whether or not the two formulations use the same notion of representation, they both entail acknowledging that Frege's problem can arise for any particular representational position: No matter how an entity is referred to in thought or perception, the same entity can be referred to from a different perspective–marked by a different mental representation. Uniting the different perspectives constitutes a step, an achievement, an insight, an acquisition of information, or a realization of cognitive value. Note that singular context-bound applications (and pure demonstratives like <u>that</u>) count as representations-as. Subsequent theses place more restrictive conditions on singular reprsentation.

3. God was said to have such a power to think of things without any discursive or 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 non-perspectival aspects of intellectual intuition except that acquaintance was not supposed to bring the objects of thought into being. He tends to conflate objects of acquaintance with perspectives.
  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 or confusion. 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 <u>linguistic</u> 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.

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, or even screens or detours, between individual and referent is a product of elementary misunderstanding that rests on cartoon-like philosophizing.

I discuss empirical grounds that support the thesis in my "Perceptual Anti-Individualism", in preparation. I believe that these grounds over-determine more general considerations.

4. 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 anaphorically back to those specific events.

5. I discuss this singular sort of context-dependent representation, insofar as it occurs in thought, in "Belief <u>De Re</u>", <u>The Journal of Philosophy</u> 74 (1977), pp. 338-362; and "Russell's Problem and Intentional Identity" in <u>Agent, Language, and the Structure of the World</u>, Tomberlin ed. (Indianapolis, Hackett Publishing Company, Inc., 1983). I discuss such singular representations as they occur in perception in "Perceptual Entitlement", <u>op. cit.</u>. Such perceptual singular elements are needed to account for the fact that individual's perceive particulars which need not be uniquely specified by general perceptual categorizations of aspects of the particulars. Their perceptions and perceptual systems represent particular objects and property 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.

6. I am tempted by the view that all concepts are ability general. Then one might take ability generality to be criterial. 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 "Reference and Proper Names", The Journal of Philosophy 70 (1973), pp. 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. Exactly how to distinguish between ability general and ability particular, with regard to representations of historically specific entities, is itself a bit of an open question. I continue to think, however, 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 relevant conceptual abilities are not explained or grounded in terms of any particular events.

7. I have changed "formally general" in "Descartes and Individualism: Reply to Normore", op. cit. 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 (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.

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

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.

8. I believe that ultimately syntactic generality is a wider category than I have defined it here. Here I take it to be equivalent to being attributive. In perception, this equivalence holds, I think, even if one widens the category. In thought, syntactic generality ultimately should be characterized sufficiently widely that it includes not only predicative concepts, but function concepts (the father of), 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 operates on something further. I believe that this is what Frege was getting at with his idea of an unsaturated expression.

9. Thus in this case, a semantically singular, syntactically singular representation (here, 3) restricts the semantical generality of a non-complex predicative representation (here, is identical with). In "On What There Is", 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 non-complex.

I think that these expression simply express the complex syntactically general mental representation <u>is identical with Socrates</u>. 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 non-complex syntactically general representations that are semantically singular are hard to come by.

10. 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 <u>such</u>, <u>next</u>, <u>later</u>. I think that the thesis about to be stated applies to them. Their application requires association with guiding non-schematic, semantically general, ability general representations. I am also inclined to believe that they require <u>singular</u>, context-bound acts of application–to instances–when they are not being used anaphorically.

11. <u>Three</u> is to be understood here as grammatically singular rather than as adjectival. I regard <u>three</u> as <u>not</u> composed of other concepts (such as <u>one</u> and <u>plus</u>). I discuss the point in section V.

12. Even <u>those</u> is in effect multiply singular–plural–rather than general. I think that applications are inevitably non-general, for this reason: They nail representation down to entities in context. What it is to be an entity in a context is to be particular. Something in the representational system must be particular in order to track the particular entities that are "nailed down". Anything representationally general, unless it manages to specify uniquely, is liable to apply to different entities in different contexts. So concrete, particular, elements, with a root in representational context-bound singularity, are necessary to insure unique representational connection to contextual particulars.

13. An applied attributive representation like <u>is such</u> is context-bound, or ability-particular, but <u>complex</u>-- inasmuch as it involves the schematic ability-general predicate <u>is such</u> together with the representation that marks the application. There will, I think, also be a more restrictive, guiding attributive element associated with particular applications of <u>such</u>, in the particular thought. Similarly, I think that attributives like <u>Cartesian</u> that are not ability general are probably appropriately understood as involving a complex of applications and ability general attributives. Nothing important to the present enterprise hangs on this conjecture. Cf. note 6.

14.Being non-schematic, semantically general, and ability general does not suffice for being attributive, if plural constructions like <u>the dogs</u> refer not to a set but to (all) the dogs severally. 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.) I also think that it is at best unilluminating to claim that being non-schematic is necessary to being an attributive representation. (If <u>is a person from her city</u> (unapplied) is not attributive, further explanation is needed.) Being syntactically general may provide a very broad, loose, generic notion of being attributive, as long as the notions are applied to perception as well as thought. Those with firmer intuitions on the matter are invited to investigate more illuminating explications. The notions <u>ability-generality</u>, <u>non-schematic</u>, and <u>semantically general</u> are intended to sharpen the sort of attribution involved in guiding singular reference.

15. The terms "guides" and "accompanies", about to be explained, do occur in the argument.

16. I do not, of course, hold that the demonstrative's representational power is exhausted by the accompanying, or guiding, general representations. The second thesis itself does not even claim that the non-schematic, 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 accords a general representation in determining the purported referent of the context-bound singular representation.

17. As noted, I think concepts 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", op. cit.. 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. Use of the concept God or Tlaloc presupposes general attributions, such as deity, agency, god of rain. I believe that individual concepts require some non-schematic, semantically general, 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 non-trivial.

18. For discussions of ego-centric indexes or de se elements in perception, see my "Perceptual Entitlement", op. cit., and "Memory and Persons", The Philosophical Review, forthcoming.

19. 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.

20. There are really two arguments in this paragraph. 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 suspect 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. The stronger premise of the first argument will be reused in the argument that G is non-schematic. The premise of the second argument is not strong enough to

show that G is non-schematic. It suffices, however, to show that G is ability-general.

21. I take it that the notion of attribution derives from Aristotle's notion of saying of. Here we are not discussing saying, but 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 notion is present in Kant's notion of a predicate of intuition. In my terminology, predicates are conceptual attributives, but I think the difference is only terminological.

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

23. The requirement of accompaniment holds only for perception-based representation. The second thesis relaxes it for thought in general.

24. In some of his articles on multiple object tracking, Zenon Pylyshyn skates rather 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 pre-conceptual and to pick out "visual objects" that are "proto-objects". It is unclear to me whether Pylyshyn intends "pre-conceptual" to amount to "pre-perceptual" (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), pp. 157-167.) I also 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. 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 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 non-perceptual registration of simply a sudden onset of proximal stimulation. In the perceptual tracking, although shape, color, kind are not tracked, it seems to me that 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" Technical Reports of Rutgers Center for Cognitive Science (1999); "Situating Vision in the World", Trends in Cognitive Sciences vol. 4 (2000), pp. 197-205; "Visual Indexes, Pre-conceptual Objects, and Situated Vision", Cognition 50 (2001), pp. 127-158.

25. 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 perceptual 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 elements.

26. In principle, I allow for ontological identification of representational perceptual kinds 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.

27. For discussion of this very generic representational category for physical objects, see Elizabeth Spelke, "Principles of Object Perception", Cognitive Science, vol. 14 (1990), pp. 29-56; Fei Xu, "From Lot's Wife to a Pillar of Salt: Evidence that Physical object is a Sortal Concept", Mind and Language vol. 12 (1997), pp. 365-392 ; Xu, and Carey, "Infants' Metaphysics: The Case of Numerical Identity" Cognitive Psychology vol. 30 (1996), pp. 111-153; Jusczyk, Johnson, Spelke, and Kennedy, "Synchronous Change and Perception of Object Unity: Evidence from Adults and Infants" Cognition vol. 71 (1999); Carey and Xu, "Infants' Knowledge of Objects: Beyond Object Files and Object Tracking" Cognition vol. 8 (2001).

28. 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.

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

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

31. 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 then be: the individual must apply or presuppose in perception or thought some non-trivial 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.

32. For such a denial, see Gareth Evans, The Varieties of Reference (Oxford, Clarendon Press, 1982), pp. 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. p. 117) mistaken, and his strictures on perceptual belief itself excessive (pp. 151-170). For criticism of Evans that I largely agree with see Marleen Rozemond, "Evans on De Re Thought", Philosophia 1994, pp. 275-298. I think that his view is a rearguard defense of the old over-reliance on agent knowledge and control in determining a referent, an over-reliance driven by the traditional philosophical hyper-intellectualization of accounts of thought.

33. 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 seems well entrenched in any empirically reasonable theory of perception.

34. 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.

35. The distinction between individual and perceptual system is not, I believe, significant for this argument. I take it that 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, in particular the conscious ones, and I believe many others, are also perceptions by the individual. The point of explanation in perceptual psychology is to explain the perceptions that individuals have, and their success or failure. The explanation locates those perceptions (perceptual representations) in a perceptual system governed by general principles.

36. 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 back-up choice) internal image if it is not successful.

37. 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, Miles trans. (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 physical events.) John Searle argues for the stronger Michotte view in Intentionality (Cambridge, England, Cambridge University Press, 1983). I criticize his argument in "Vision and Intentional Content" in John Searle and His Critics (Oxford, Basil Blackwell, 1991).

38. 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 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 only provides a loose restriction on the reference, at most a necessary condition, not a sufficient one. The demonstrative element in the thought remains irreducible.

39. 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, Hahn and Ramberg eds. (Cambridge, Massachusetts, 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 categorize 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.

40. 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 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.

41. Cf. Keith Donnellan, "Reference and Definite Descriptions", op. cit..

42. I believe that there are interesting issues in distinguishing the role and epistemic status of different types of restricters. 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 physical 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 presupposed by the perceptual system, although I think that the nature of the presupposition is different in the two cases.

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

44. Hilary Putnam, "It Ain't Necessarily So" The Journal of Philosophy 59 (1962); reprinted in Putnam's Philosophical Papers volume I (Cambridge, England; Cambridge University Press, 1975). See also Putnam's "The Meaning of "Meaning"", Philosophical Papers, volume II (Cambridge, England; Cambridge University Press, 1975).

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

46. Bertrand Russell, "Knowledge by Acquaintance and Knowledge by Description" in The Problems of Philosophy (Oxford University Press, Oxford, 1982), first published 1912.

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

48. David Kaplan, "Quantifying In" in Words and Objections: Essays on the Work of W.V. Quine, Davidson and Hintikka eds. (Dordrecht, Holland, D. Reidel Publishing Co., 1969).

49. Cf. my "Belief De Re", op. cit.. 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, or applicable to particulars, in his early work. I argued that the context-dependence of applications is key to de re cases. Vividness seems to me clearly unnecessary to de re states or attitudes. One can form a perceptual belief of an object, and not register or remember enough of its features to have a vivid representation. Such beliefs are common; and even basic to action. Clearly one can have a de re belief of an object in such cases. The epistemic relation is very direct; it is only partly conceptualized; and it is context-dependent. Moreover, vividness is irrelevnt to de se or ego-centric indexes, which seem clearly to be subspecies of de re reference. (The distinction between se and ree is not ontological. Se's are res. The distinction lies in the mode of presentation.) In effect, I criticize the Of-ness condition–Kaplan's third condition on de re thought–in section V. of this paper. The basic idea of reference that is backed by an immediate non-conceptual representational and epistemic capacity, which grounds my present positive account, is initially developed in "Belief De Re".

50. The main idea of this argument derives from Peter Strawson's duplication argument, Individuals (Garden City, New York; Doubleday & Company, Inc., 1963; originally published 1959), chapter 1.

51. Cf. Timothy Williamson, "Is Knowing a State of Mind?" Mind 104 (1995), pp. 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.

52. I will develop this point at more length in "Perceptual Anti-Individualism", in preparation.

53. For earlier statements of this view, see "Belief De Re", op. cit.. 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. 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.

54. 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 non-inferentiality 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 non-autonomously–only through reliance on others.

55. Cf. my "Reason and the First Person" in Knowing Our Own Minds: Essays on Self-Knowledge, Smith, Wright, and MacDonald eds., (Oxford, Clarendon Press,1998), and "Memory

and Persons", <u>op. cit.</u>

56. Cf. "Memory and Persons", <u>op. cit.</u>, especially section V.

57. 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 don't create by intuiting. But the intuition may be guided by the creation–the forward-looking causal power. These cases were interestingly discussed by G.E.M. Anscombe, <u>Intention</u> (Oxford, Blackwell, 1957), though not by reference to the notion of <u>de re</u> states.

58. 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 book of essays on Frege, forthcoming Oxford University Press.

59. 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 vividly 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 <u>de re</u> thought without direct causal connection. I think that one could think <u>de re</u> of the color without imagining it at all. The <u>power</u> to imagine it seems arguably sufficient. I am indebted to Mark Johnston for the idea of this note, though not the details.

60. Klein and Starkey, "The Origins and Development of Numerical Cognition: A Comparative Analysis" in <u>Cognitive Processes in Mathematics</u>, Sloboda and Rogers eds. Oxford, 1987; Karen Wynn, "Psychological Foundations of Number : Numerical Competence in Human Infants", <u>Trends in Cognitive Sciences</u> 2 (1998), pp. 296-303; Whalen, Gallistel, and Gelman, "Nonverbal Counting in Humans", <u>Psychological Science</u> 10 (1999), pp. 130-137; Uller, Carey, Untley-Fenner, Klatt, "What Representations Might Underlie Infant Numerical Knowledge?" <u>Cognitive Development</u> 14 (1999), pp. 1-36. Subitizing occurs in lower animals which 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.

61. Kaplan in "Quantifying In", <u>op. cit.</u>, section VIII, discusses canonical names, calling them "standard names". He counts quotation names and numerals as examples. He centers on 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 <u>de re</u> attitudes. Large numerals are not. The key issue concerns the immediacy, the non-computational and non-inferential character, of the individual's representational and epistemic capacity that backs use of the name. Thus I think that only uses of very small numerals yield <u>de re</u> attitudes. I believe that uses of canonical names for non-complex representational contents and for relatively simply combinations of them (for example in that-clauses that can be comprehended without exercise of non-modular computation) are candidates for yielding <u>de re</u> attitudes.

62. The third and fourth categories of non-empirical <u>de re</u> cases raise interesting questions about reference to the future. Many references to objects in the future do not support <u>de re</u> attitudes. Complete definite descriptions do not either. Equally, names introduced in terms of context-free descriptions ("Newman 1 and ½"–introduced as referring to the first person born in 2050) cannot yield <u>de re</u> attitudes toward their referents. 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 <u>de re</u> 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, <u>entirely</u> dependent on ability-general representation.

 What are we to say about attitudes using applications of the indexical <u>tomorrow</u>? Kaplan denies attitudes <u>de re</u> status with respect to positions in which <u>tomorrow</u> occurs. He appears to base this denial on our lack of causal relation to future days. Cf. David Kaplan, "De Re Belief" in Richard T. Hull, ed., <u>Presidential Addresses of the American Philosophical Association</u> (forthcoming). This may signal a different conception of the <u>de re</u>. But from my perspective, a denial of <u>de re</u> status based on absence of a causal relation to the <u>re</u> would not be a good reason. We have seen counterexamples to this principle from other quarters. The indexical <u>tomorrow</u> 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 <u>tomorrow</u> can yield states and attitudes that are <u>de re</u> 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 <u>the 754,573,211, 467th day after today</u>. Because most of us cannot parse or apply the number non-inferentially, such an indexical could not be used to think <u>de re</u> thoughts with respect to the relevant day. What enables <u>tomorrow</u> to effect <u>de re</u> reference is that the day is often cognitively and practically at hand. This is partly because the day bears a numerical relation to today which 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.