

David Conan Wolfsdorf\*

# Hinzen on Grammatical Reference

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## 1 The grammaticalization of thought and meaning

Prof. Hinzen's paper "Reference across pathologies: A new linguistic lens on disorders of thought" (hereafter *RP*) divides into two parts. The first, spanning the introduction and Section 2, presents in summary form elements of a theory of language; the second, spanning Section 3, applies the theoretical elements to explain features of the cognitive pathologies of autism spectrum disorder and schizophrenia. My comments will focus on the central concept of the linguistic theory in the first part of the paper: reference.

The linguistic theory consists of a distillation and highlighting of a number of previously published works by Hinzen alone as well as in collaboration with other scholars. Most significant among these is Hinzen and Michelle Sheehan's *The Philosophy of Universal Grammar* (hereafter *PUG*).<sup>1</sup> In the following remarks I will liberally appeal to contents from this monograph to elaborate on points in the summary of the paper and to offer my critical responses.

The very plausibility of applying linguistic theory to explain cognitive pathologies owes of course to the nature of the linguistic theory in question. Hinzen's theory, called *un-Cartesian linguistics*, ultimately rests on the conjunction of two theses. These might be called *constitution* theses insofar as each claims that one thing crucially, if not wholly, constitutes another. The significance of the constitution theses in turn owes to conventional, opposing views that the pairs of things in question are wholly or at least crucially independent of one another. Alternatively, the theses might be called *reunification* theses insofar as each claims that two entities that scholarly tradition has misguidedly taken to be independent are in fact crucially or wholly interdependent. For convenience I'll conjoin these ideas and speak of the theses as *reconstitution* theses.

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<sup>1</sup> Oxford, 2013. Hereafter and merely for simplicity's sake, I will speak of *Hinzen's*, rather than *Hinzen and Sheehan's*, views in *PUG*. Note also that aside from conventions of bibliographical citation, throughout I use italics when mentioning expressions and citing linguistic examples; and I use unitalicized text in quotation marks when quoting from authors.

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**\*Corresponding author: David Conan Wolfsdorf**, Department of Philosophy, Temple University, 716 Anderson Hall, Philadelphia, PA 19122, USA, E-mail: [dwolfsdo@temple.edu](mailto:dwolfsdo@temple.edu)

The one reconstitution thesis, which is strictly the more fundamental of the two, is that language is constitutive of thought. Contrast this with the so-called *Cartesian* alternative according to which thought does not depend on language; modular neural networks realize each capacity; and language functions merely as an expressive system, dedicated to the communication of thought.<sup>2</sup> The second reconstitution thesis is that grammar is crucially constitutive of meaning. According to the alternative – that grammar or syntax and semantics are crucially if not wholly independent – grammar is conceived as a merely formal and so uninterpreted system, which, somehow, interfaces with an independent content providing, for example conceptual-intentional, system.<sup>3</sup>

From the conjunction of the two reconstitution theses, the linguistic constitution of thought and the grammatical constitution of meaning, the deep cognitive and so epistemological significance of grammar in humans emerges. Accordingly the central thesis of *PUG* is that “grammar is a distinctive way of organizing meaning and thought, making knowledge possible.”<sup>4</sup> Consider the punchy Wittgensteinian epitaph to the book: “Like everything metaphysical, the harmony between thought and reality is to be found in the grammar of the language.”<sup>5</sup>

In light of these commitments, it follows that cognitive pathologies in humans should have linguistic symptomatology. Such symptomatology will not be explicable as mere impairments in the capacity to express thought, as in fact is the case with those who suffer from aphasia. Rather the symptomatology will be explained as a disorder intrinsic to thought itself, since again according to the un-Cartesian theory thought is constituted by language. More precisely still, given the grammaticalization of meaning thesis, the linguistic symptomatology should be explicable precisely in grammatical terms. The topic of Hinzen’s paper, reference across pathologies, then follows from the view that reference is a function of grammar.

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<sup>2</sup> Whether Descartes himself was actually a Cartesian in this sense is questionable. Cp. *PUG* 14, n. 12.

<sup>3</sup> Cp. Hinzen’s remarks on Chomsky’s Strong Minimalist Thesis at *PUG* 6. Note also that in *PUG* Hinzen provides a valuable historical account and explanation of this, call it, *non-constitution* thesis and its prominence in modern philosophy and contemporary linguistics. He also identifies two historical precursors – largely neglected in mainstream Anglophone philosophy and linguistics – to the un-Cartesian theory: the Indian tradition of *Vyākaraṇa* rooted in Pāṇini’s theory of Sanskrit grammar and the late Medieval Modists’ view of the cognitive significance of parts of speech. Cp. *PUG* 15-32.

<sup>4</sup> *PUG* 1. Cp. “the goal of this book at large [is] to demonstrate the epistemological significance of grammar.” (*PUG* 119)

<sup>5</sup> *Philosophical Investigations*, § 55.

## 2 Kinds of reference

One feature of the summary in *RP* that may be confusing relates to Hinzen's use of the central term: *reference*. Hinzen aims to advance a novel theory of reference. But this novel theory does not simply entail the rejection of a range of other conceptions of reference. This owes to the fact that Hinzen recognizes various kinds of reference. Precisely, in *PUG* he distinguishes three kinds: functional, lexical, and grammatical.<sup>6</sup>

Functional reference occurs in non-human animals. It obtains between percepts, rather than concepts, and what might be called their *perceptual specifications*. The example Hinzen cites is alarm calls in monkeys or chickens: "When under the causal control of an external trigger, monkeys or chickens call for alarm, the call can be acoustically distinct depending on what predator is perceived to cause the threat."<sup>7</sup> The term *functional* encourages the thought that the referring expression, here the alarm call, plays a role in a (relatively simple, direct, and inflexible) causal nexus.<sup>8</sup> The call is the effect of a certain perceptual stimulus, and it in turn prompts some form of behavioral response among the members of the caller's troop or flock. As Hinzen indicates, qualities of the vocalization may vary according to the nature of the perceptual specification; and presumably this may in turn effect distinct types of response.

Lexical reference is a relation between lexemes, that is, "content words" or lexical concepts, and their so-called lexical specifications. So lexical reference is limited to language users. In *RP* Hinzen offers *man*, *edible*, and *warm* as examples of lexically referring terms. Such items are said to "classify perceptual data ... falling into abstract stimulus classes."<sup>9</sup> Ontogenetically then lexemes are stimulus-determined; however, in contrast to percepts, their tokening does not depend on the presence of the type of perceptual stimulus that constitutes their

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6 *PUG* 80. Hinzen uses the term *reference* in additional ways as well. E.g. cp. "In all the cases we have considered – bare nominals, names, definite determiners, demonstratives, and pronouns – *referentiality* is scalar: it can be purely predicative, quantificational/scope-taking, *referential*, or deictic, depending on grammatical context." (*PUG* 127, with my italics)

7 *PUG* 42. Cp. Michael Tomasello, *Origins of Human Communication*, MIT, 2010, 22–30.

8 "The triangle between the caller, the stimulus, and the action is causally and adaptively closed. The calls occur when the stimulus does, which is also when the percept does, which identifies the predator. There is no evidence that the calls in question are ever applied to anything other than the stimulus, in the very adapt context in question; or that the percept involved in one such call can be targeted as such, and be combined with another percept ..." (*PUG* 42; cp. Derek Bickerton, *Adam's Tongue*, Hill and Wang, 2009, 44–7, 68–9)

9 *RP* 2.3. Cp. *PUG* 49 where Hinzen defines a lexeme as a "lexical address for a set of perceptual features."

content. In more traditional terms, lexical reference appears to be equivalent to what has been called *semantic reference* and thereby to contrast with so-called *pragmatic reference*.<sup>10</sup>

Finally, grammatical reference is a distinct form of linguistic reference, in this case reminiscent of pragmatic reference. Grammatical reference, in almost all of its forms,<sup>11</sup> incorporates lexical reference. But in contrast to lexical reference, grammatical reference is mediated by grammar. As such it obtains between grammatical entities and whatever it is that is the content of such entities. Central to Hinzen's theory, the entities in question are so-called *formal ontological types* or *categories* (more on which below).

In principle these three kinds of reference might be related in any number of ways, including having no substantive relation at all. Yet they do appear to share the following basic features. All three kinds of reference consist of some type of content bearing entity: a non-linguistic vocalization, a content word, and a grammatical expression respectively. Each content bearing entity is essentially related to a mental representation: a percept, a lexical concept, and a grammatical thought respectively. And each mental representation is essentially related to some type of content or feature of the external world that it bears.<sup>12</sup> To this extent one might view these forms of reference as specifications of a single, admittedly rather abstract model.

At any rate, in view of these considerations, what Hinzen should be viewed as presenting in *RP* is a theory of a particular kind of reference, again grammatical reference. Therefore, the novelty and controversy pertaining to the theory should turn on one or the other of the following opposing theses: either there is no such thing as grammatical reference; or there is such a thing as grammatical reference, but Hinzen has in some way mischaracterized or inadequately characterized it.<sup>13</sup>

**10** E.g. cp. Barbara Abbott, *Reference*, Oxford University Press, 2010, 2–3.

**11** I discuss the single exception, first person pronominal reference, below.

**12** Cp. "The core meaning of 'semantic' is that it denotes relations to the world: *content*." (*PUG* 141)

**13** Analogous points regarding Hinzen's use of other central terms in *RP* such as *thought*, *meaning*, and *deixis* could be made. E.g. Hinzen commits himself to the view that among animals only humans are capable of thought. But, I take it, what Hinzen intends to convey by this is that there is a species-specific form of cognition that occurs only in humans and that such cognition depends on the uniquely human capacity for language. In turn, Hinzen recognizes forms of cognition in non-human animals. Such cognition is moreover taken to be computational, to involve the manipulation of symbolic representations. However in non-human animals the representations are limited to percepts. (Cp. *PUG* 45) On *deixis*, see below and at n. 31.

In the following, my primary aim will be to clarify some of the central features of grammatical reference, as Hinzen conceives it. Along the way I will offer some critical remarks pertaining to this conception. My critical responses fall under the general claim that in certain respects Hinzen has inadequately characterized grammatical reference. More precisely, it seems to me that Hinzen's account occasionally needs clarification; as the example of *reference* illustrates, key terms of the theory are used in multiple ways. There also appear to be some contradictions in the theory. Above all, one of the central concepts of the theory, referential scalarity, seems not to be entirely clear or coherent.

### 3 The nature of grammatical reference

What then is grammatical reference? And what justifies Hinzen's claim to it? As stated, grammatical reference is a relation that obtains between a grammatical entity and a formal ontological entity. In elucidating the nature of the grammatical entity, it must be appreciated that Hinzen does not understand grammar in terms of parts of speech. Grammar is universal, whereas diverse natural languages exhibit variation in their morpholexical and morphosyntactic classes. Accordingly, grammar is understood in terms of a set of universal functions and relations that hold between the words that fall into diverse language-specific classes.<sup>14</sup>

What then are the universal functions and relations that constitute grammar? We are told that grammatical reference and predication are the most salient kinds. Indeed grammatical reference is the most basic function of grammar.<sup>15</sup> With this, however, we have lapsed into an explanatory circle: grammatical reference is being defined in terms of grammar, and grammar in terms of functions such as grammatical reference. To what extent Hinzen has a non-circular account of the kind of reference that he aims to explain remains to be seen.

At any rate, since grammatical reference is the most basic function of grammar, a unit of grammatical reference – call it a *referential unit* – is the most basic unit of grammar. Referential units themselves are of three kinds: nominal, verbal, and clausal. Among these, nominal referential units are the most basic kind. Verbal and clausal referential units are constructed in part by embedding them.

All referential units share a structure that is constituted by two elements: an edge and an interior, viz.: [EDGE [INTERIOR]].<sup>16</sup> The interior contains so-called

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<sup>14</sup> PUG 67.

<sup>15</sup> PUG 102, 117.

<sup>16</sup> Hinzen notes that this entity resembles a Chomskyan phase. Accordingly he suggests that “the phase is the smallest unit of grammatical organization.” (PUG 102)

*descriptive* content. The edge contains “grammatical elements” and so grammatical content. For any given kind of referential unit – again, nominal, verbal, or clausal – the type of grammatical element contained in the edge governs a form of grammatical reference with a certain so-called *referential strength*. Accordingly, a central feature of Hinzen’s theory of grammatical reference is that it is scalar and that its scalarity is, again, conceived in terms of the gradable property of referential strength. I return to this idea below.

Presently, in the case of the nominal referential unit, the descriptive content of the interior is supplied by lexemes (recall the description of lexical reference above). In other words, descriptive content is lexical content. The grammatical content of the edge is, again, supplied by “grammatical elements,” one example of which is a determiner. The following unit provides an illustration of these commitments: [<sub>DP</sub> the [<sub>NP</sub> man]].

In *PUG* Hinzen refers to grammatical reference as *intentional reference* as well as *deictic reference*. In elaborating the present account of grammatical reference, I will comment on Hinzen’s use of these two terms respectively.

Between *RP* and *PUG*, Hinzen uses the term *intentional* in two ways. Consider *RP*:

All thought inherently has a content – without it, it would be empty and not *be* thought. This is one sense in which thought is *intentional* (with a ‘t’): it is always “about” some object, person, state, event, possibility, or fact, and properties that these involve.<sup>17</sup>

Compare *PUG*:

Intentionality (with a ‘t’) refers, as we will use the term, to our ability to refer to an object in the world deliberately and flexibly.<sup>18</sup>

It is in terms of this latter usage that Hinzen speaks of grammatical reference as *intentional reference*. Accordingly intentional reference entails voluntary reference. Contrast this with sense perception. Insofar as our sensory faculties are intact, the external world simply impinges upon them. In other words, sense perception is a stimulus dependent cognitive state, and as such not under voluntary control. Grammatical reference, on the other hand, is not constrained by environmental stimulus.<sup>19</sup> We can think and speak of and therefore

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<sup>17</sup> *RP* 2.2.

<sup>18</sup> *PUG* 36.

<sup>19</sup> Cp. “the whole point about the emergence of lexical items is that they can be activated in the absence of a sensory trigger.” (*PUG* 119)

grammatically refer to things in their absence.<sup>20</sup> Hence what we think and speak of is (in many respects) up to us.<sup>21</sup>

The cognitive control and flexibility that grammatical reference enables in turn depends on what Hinzen refers to as cognitive capacities for and processes of *de-* and *re-indexicalization*:

The process of lexicalization de-couples the percepts that are selected from their respective visual stimuli, giving us new and more abstract entities, lexical items, which are stimulus free and independently manipulable, enabling creative thought and reference. For this reason, we may describe the process as one of “de-indexicalization”.<sup>22</sup>

But the “freedom from experience” that lexicalization enables “is bought at the cost of having to *re-establish* a link with experience.” In other words, the decoupling in turn requires a “*mechanism* ... to relate [lexical concepts] back to the world on occasions of activating them: a system converting concepts into *referential expressions*. In this reference-system, reference to the world will be a creative (intentional) act subject to conscious control ... We identify this system with grammar.”<sup>23</sup>

Re-indexicalization is deixis. In both *PUG* and *RP* Hinzen identifies the developmentally most basic form of deixis with finger pointing in infants, and he describes grammar a “device of *extended deixis*”:

The root meaning (and earliest developmental manifestation) of this notion of reference [i.e. grammatical reference] we take to be (e.g. index finger) pointing, which is deictic.<sup>24</sup>

For instance, the infant points at a dog and says *dog*. In this sort of case the lexical term *dog* combines “predicatively with the declarative gesture” to form an “integrated unit ... involving both reference and description in different

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**20** Observe that imagination is also a form of cognition that is not stimulus-dependent. Hinzen acknowledges this point in a footnote in *PUG*, and remarks that what distinguishes imagination from grammatical reference is that the former is not combinatorial. (*PUG* 38, n. 1)

**21** In his employment of the term *flexibility* in this context, it seems to me that Hinzen may be conflating two capacities: one for stimulus free activation, the other for combination of contents. Memory does not require stimulus, and some animals have, for example, extraordinary spatial memories. So it might be helpful here to target combinatorial capacity and to reflect further on its constitutive and enabling conditions. Central, I would think, must be its involvement in abstraction of a particular kind, including non-analogic and non-isomorphic symbolization.

**22** *PUG* 47.

**23** *PUG* 47.

**24** *PUG* 80; cp. *RP* 2.6.

modalities.”<sup>25</sup> As linguistic capacities develop, the incorporation of explicit grammatical elements into speech “vastly [expands] the range of possible reference beyond where our index finger can point.”<sup>26</sup>

This account suggests that it is precisely the grammatical elements in the edge of referential units that are responsible for encoding and thereby enabling the deictic function. On the other hand, an act of pointing or extended deixis also requires some conception of what it is that one is referring to. As such deixis and so grammatical reference requires descriptive content.<sup>27</sup> Evidently it is the lexemes or lexical concepts housed in the interior of the nominal referential unit that provide this content. Compare Hinzen’s following remark from *PUG*:

Any act of reference, then, contains an *identifying description*, however reduced it may be, which as such must involve a concept, which is what *supplies* the descriptive content in question, and hence the identity conditions for the referent.<sup>28</sup>

On the other hand, in *RP*, in the context of his discussion of grammatical reference as intensional (with an *s*), Hinzen writes:

Intensionality entails that when we change the lexical *or grammatical* (i.e. relational) ingredients of a thought, the thought becomes a different one, whether or not we keep the reference [i.e. the referent] (the external element) stable.<sup>29</sup>

This suggests that in fact the grammatical elements of the nominal referential unit also contribute to the “identity conditions” of the referent. If so, then Hinzen’s remarks here appear to require his recognition of two types of descriptive content: lexical and grammatical.<sup>30</sup> Alternatively, given the distinction he draws between the contributions of the edge and the interior of the nominal referential unit, further clarification of the non-descriptive, but *semantic* contribution of grammatical elements seems needed.

In concluding this brief consideration of grammatical reference as deictic reference, I return to the worry expressed above whether Hinzen is able to offer a non-circular account of grammatical reference. Hinzen’s conception of grammar as a mechanism for re-indexicalization helps clarify what he might mean

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<sup>25</sup> *RP* 2.6.

<sup>26</sup> *PUG* 80; cp. *RP* 2.6.

<sup>27</sup> As noted above, first person pronominal reference seems to be one exception to this principle.

<sup>28</sup> *PUG* 54.

<sup>29</sup> *RP* 2.2, with my italics.

<sup>30</sup> E.g. cp. the phrase “grammatical semantics” at *PUG* 142.



by *deixis*.<sup>31</sup> I take it that deixis is here conceived as the phenomenon whereby language enables a speaker, that is, a first person, for the purposes of communication to a second person, to situate (lexical) content in time and place. Hinzen's position is precisely that grammar is the means by which this phenomenon is realized. This seems to me to some degree and, I think, non-circularly to illuminate Hinzen's conception of what grammatical reference consists in.

## 4 Referential strength and formal ontology

I return now to the claim mentioned above that grammatical reference is scalar, and more precisely that referential units have varying degrees of strength. I continue to focus on the case of nominal reference. In *PUG* Hinzen proposes the following "hierarchy of nominal reference":

(\*the) \*(NP) < \*(a) \*(NP) < \*(the) \*(NP) < \*(this) (NP), < \*(he) \*(NP).

Here the symbol < means *is referentially weaker than* or *is more dependent on the lexical content of the descriptive predicate*. Accordingly, the hierarchy proceeds from bare noun-phrases to indefinite determiner noun-phrases to definite determiner noun-phrases to demonstrative determiner noun-phrases to pronouns.<sup>32</sup>

Hinzen characterizes the basic grammatical principle of this scalarity in the following terms:

The general principle [is] that increased referentiality [i.e. referential strength] corresponds to the [referential unit] becoming more "edge-heavy" ... along with the fact that increased referentiality correlates with [the recruitment of] increased grammatical resources.<sup>33</sup>

For instance, in the phrase *unicorns* in the sentence *Mary is hunting unicorns*, it is suggested that no edge is projected and therefore that reference is determined

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<sup>31</sup> *Deixis* and *deictic* are other key terms of his theory that Hinzen uses in various ways. E.g. "This becomes even clearer where the edge gets even stronger, through the addition of a deictic element, assuming with [Tom Leu, *The internal syntax of determiners*, NYU dissertation, 2008] that 'this' morphologically decomposes into the definite determiner and a deictic element ('the' + 'here')." (*PUG* 128) And: "Where 'the' in the copular construction ... [*John is the man*] is strengthened to 'this', the predicative reading is out in this position as well, and the speaker will necessarily make deictic reference to a particular individual in the context: [*John is this man*]." (*PUG* 120-21)

<sup>32</sup> *PUG* 41.

<sup>33</sup> *PUG* 129.

“purely via the descriptive content of the nominal.”<sup>34</sup> In the phrase *lamb* in *Mary is eating lamb*, arguably an edge is projected, viz. *Mary is eating* [ $\emptyset$  [*lamb*]], which is equivalent to *Mary is eating some lamb*.<sup>35</sup> Referential strength increases further as the edge is both projected and filled, for example *Mary is petting a lamb*. And referential strength increases still further with the employment of increasingly strong determiners, for example: *Mary is petting the lamb* and then *Mary is petting this lamb*. At the strong pole of the nominal referential hierarchy, the descriptive content is obligatorily dropped: *Mary is petting it*.<sup>36</sup>

More generally, Hinzen characterizes the transformation of the grammatical and descriptive content constituting the referential unit as *topological*:

the term “topology” indicates the possible transformations (or deformations) of a given geometrical object, while leaving its basic identity intact (invariant under the transformations in questions). In the case of grammatical reference, the geometrical object is the [referential, e.g. nominal referential unit].<sup>37</sup>

In short, Hinzen’s theory of grammatical reference is also a topological theory.<sup>38</sup>

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**34** PUG 128.

**35** There is reason to question whether *Mary is eating lamb* is equivalent to *Mary is eating some lamb*. Compare the following two sentences: *Mary ate lamb for two weeks*. *Mary ate some lamb for two weeks*. In the former the quantifier *two* takes scope over *lamb* and there is no alternative reading. In contrast there is a reading of the latter in which the quantifier *some* takes scope over *two*. (I have adapted this example from Gregory Carlson, *Reference to Kinds in English*, Garland Publishing, 1980, 12–17.) If this criticism is correct, it may not simply constitute the flagging of an isolatable infelicitous example. Bare mass nouns and plurals appear to share an array of semantic properties. But at least according to a Carlsonian or neo-Carlsonian interpretation of them, these properties are not to be explained by appealing to “grammatical elements” in the specifier of the NP.

**36** PUG 127–28. Cp. “as the edge expands – from an edge that is necessarily lexically zero to one that has a referentially weak, indefinite determiner, to one with an obligatory ‘strong’ and definite determiner, to one with a deictic determiner or pronoun that *can* occur without the lexical restriction, and finally to a deictic pronoun that *must* occur without such a restriction – we see reference getting more specific and stronger, i.e. less dependent on a lexical description or predicate.” (RP 2.6)

**37** PUG 117.

**38** It should be noted here that this theory is deeply indebted to Pino Longobardi’s Topological Mapping Theory of nominal reference; on which cp. Longobardi, “Reference and Proper Names,” *Linguistic Inquiry* 25 (1994) 609–65; “Toward a unified grammar of reference,” *Zeitschrift für Sprachwissenschaft* 24 (2005) 5–44; “Reference to Individuals, Person, and the Variety of Mapping Parameters,” in H.H. Mueller and A. Klinge, eds., *Essays on Nominal Determination*, John Benjamins, 2008, 189–211. But Hinzen’s theory also involves important criticism of Longobardi’s account and, in incorporating verbal and clausal reference, extends well beyond it. (Cp. PUG 130–74.)

Granted this, what exactly is referential strength? In grammatical or linguistic terms, we have already encountered an answer: from weakness to strength referentiality correlates with a progression from those linguistic forms that are “most lexically mediated or descriptive” to those that are “most grammatically mediated or deictic.”<sup>39</sup> But crucial as this idea is for Hinzen’s theory, it constitutes merely one component of a satisfactory answer to the question posed.

As Hinzen notes, the grammatical forms constitutive of the hierarchy of nominal reference also correlate with a hierarchy of types or categories of content. These categories Hinzen characterizes as members of a *formal ontology*. The general formal ontological category corresponding to the nominal referential unit is – to employ a term of traditional ontology that Hinzen uses – that of object. Compare event as the general formal ontological category corresponding to the verbal referential unit, and proposition corresponding to the clausal referential unit.<sup>40</sup>

Accordingly, the formal ontological categories of content of weaker and stronger forms of nominal reference are kinds of objects. Those kinds of objects referred to by weak forms of nominal reference include: abstractions, non-individuated substances, and properties. Examples of each, employing the lexeme *man* follow: *John is man enough to solve this problem*; *John likes man* (that is, he has a penchant for cannibalizing); *John is a man*.<sup>41</sup> Stronger forms of nominal reference correspond to various sub-categories of individuated substances, that is, individuals, such as an arbitrary number of individual instances of a kind (*John is looking for men*); particular individual instances of a kind potentially unknown to the speaker (*The men arrived*); a particular individual instances known to the speaker (*John likes the men*).<sup>42</sup>

In contrast to the grammatical principle responsible for differentiating nominal referential units of variable referential strength, the principles that distinguish these formal ontological categories seem to be heterogeneous and difficult to synthesize in a coherent way. They appear to include: metaphysical features such as abstractness versus concreteness, generality versus specificity, and property-hood versus individuality; seemingly hybrid metaphysico-epistemological features such as indefinite versus definite quantities; and also epistemological features such as being unknown versus known to the speaker.

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**39** RP 2.6.

**40** PUG 103. I wonder: if Hinzen borrows the terms *object*, *event*, and *proposition* from traditional ontology merely for heuristic purposes, then how should we ultimately understand the general formal ontological categories corresponding to nominal, verbal, and clausal referential units (not to mention the sub-categories corresponding to the various sub-forms of referential unit)?

**41** PUG 122.

**42** PUG 122.

A distinct concern the account raises is that some referential units that are constituted by grammatical forms of distinct referential strength appear to correspond to identical formal ontological categories. For example, compare the demonstrative determiner noun-phrase and pronoun in *John knows that man* and *John knows him*.

Another concern relates to Hinzen's claim that the first person pronoun constitutes the strongest referential unit.<sup>43</sup> For one thing, contrary to Hinzen's claim that every act of reference "contains an *identifying description*, however reduced it may be, which as such must involve a concept, which is what *supplies* the descriptive content in question," the first person pronoun is expressly said to lack descriptive content. Compare Hinzen's statement in *RP*: "reference to oneself as 'I' involves no description and is minimally lexical and maximally grammatical."<sup>44</sup> In part due to these facts, it is difficult to understand what kind of formal ontological object *I* could refer to. Surely it refers to an individual. But that individual is, explicitly, not to be identified with a particular body.<sup>45</sup> Hence it appears to refer to a non-physical and as such abstract individual.

However these questions regarding the nature of referential scalarity may be answered, Hinzen's theory of referential scalarity prompts the following thought. At one pole of the referential scale, the first person seems to be the source of deixis, for the situating of lexical content in time and place by grammatical means is fundamentally anchored in the speaker's orientation to the world. At the opposite pole, where reference is said to be determined "purely via the descriptive content of the nominal," such content seems to reach its most tenuous connection to speaker and so context. In fact Hinzen's illustrative sentence, *Mary is hunting unicorns*, appears, even in its choice of lexical content, to underscore this ungroundedness.

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<sup>43</sup> *PUG* 119.

<sup>44</sup> *RP* 2.8. At the other pole of the referential scale, recall that in certain instances, e.g. bare plurals such as *unicorns* in *Mary is hunting unicorns*, no edge is projected and reference is determined "purely via the descriptive content of the nominal." In that case, it appears that Hinzen's committed position is that grammatical reference requires a conjunction of grammatical and lexical components in all but the extreme cases corresponding to the poles of the referential scale.

<sup>45</sup> "This body' merely specifies a physical object, reference to which does not equate to 1<sup>st</sup> Person thought." (*RP* 2.8)