

Wolfram Hinzen
and Kristen Schroeder

*Is ‘the First Person’
a Linguistic Concept
Essentially?*

Abstract: *The notion of ‘the first person’ is centrally invoked in philosophical discussions of selfhood, subjectivity, and personhood. We ask whether this notion, as invoked in these discussions, is contingently or essentially a grammatical term. While it is logically possible that the linguistic dimensions of self-reference are accidental to this phenomenon, we argue that no explications of such phenomena as ‘reference de se’ or ‘essential indexicality’ in non-grammatical terms has been or likely can be provided, since grammatical factors uniquely co-vary with the forms of self-reference in question. The role of grammar is reinforced by the fact that species-specific forms of reference are never purely lexical and always have a structural signature involving specific grammatical configurations; and by findings that in cognitive disorders independently characterized as disorders of selfhood, such as autism spectrum conditions, the pronominal system proves to be a particular locus of vulnerability. We conclude that grammar and human-specific forms of selfhood form an inextricable unity, inviting renewed attention to language as a constitutive condition of personhood in at least some of its forms.*

Correspondence:

ICREA (Catalan Institution for Research and Advanced Studies), Universitat Pompeu Fabra, Departament de Traducció i Ciències del Llenguatge, Roc Boronat, 138, 08018 Barcelona, Spain. Email: hinzen@icrea.cat

1. Introduction

Linguistics has played very little role in philosophical discussions of the ‘self’, the ‘first-person perspective’, ‘consciousness’, or ‘subjectivity’. To this day, the relation between these non-linguistic theoretical notions and the grammar of self-reference has remained unclear and has barely been the subject of systematic investigation. Somehow the ‘linguistics of the self’ is not on the theoretical radar. The contribution of this paper is to address this relation between language and the self directly and to argue for a novel position in which human-specific forms of self-reference are inextricably linked to the grammatical forms used to carry such acts of self-reference out, whether in ‘thought’ or ‘language’. This is not to deny that there are forms of selfhood unrelated to language — indeed it seems obvious that babies, prior to having a fully developed language and pronominal system, have *some* sense of their selves. But selfhood is not a unitary notion, and it is natural to assume that there are species-specific forms of reference to the self as well, some of which mature along with language and never mature without it. The claim we investigate and ultimately defend is that self-reference in the first person is an inherently linguistic and more narrowly *grammatical* phenomenon, which cannot be defined or explicated in non-grammatical terms.

We clear the ground in Section 2 by distinguishing a non-grammatical concept of person from the grammatical Person concept, which as a technical linguistic term we will capitalize. We then note, in Section 3, that it is the latter that has played an essential role in philosophical discussions on ‘subjectivity’, ‘personal agency’, ‘essential indexicality’, or ‘self-directed’ thought (‘thought *de se*’), yet without reflection on how these concepts relate to the human language capacity and grammar specifically. Choosing the notion of essential indexicality as our focus, we argue in Section 4 that it co-varies with grammatical factors, and, in Section 5, that no non-grammatical factors can be substituted for these. Finally, in Section 6 we discuss an empirical prediction of our account, namely that in mental health conditions involving disorders of thought and self-reference we should see a distinctive reflex of these anomalies in their respective language profiles, and specifically in the pronominal system. We suggest that currently available evidence confirms this prediction for the case of

autism spectrum conditions.¹ In fact, the system of pronominal reference, which critically involves grammatical Person distinctions, proves to be a particular locus of vulnerability across what might be termed disturbances of selfhood, including schizophrenia, thereby supporting a link between grammar and human-specific forms of cognition and selfhood.

2. Two Concepts of 'Person'

The phrase 'the first person' is technically a definite description, whose denotation is uncontroversially not as such a grammatical one. Thus we can talk about 'the first person talking or entering the room' and we will mean that the person in question does so before the second, third, etc. Used in this way, 'the first person' has a 'compositional' interpretation: 'first' means FIRST and 'person' means PERSON, where capitals are used to denote the *lexical concepts* that the relevant words encode. The word 'person' is then not a grammatical term, any more than the concept 'woman' or 'face': these are simply words in the English lexicon which capture lexical concepts, which in turn correspond to ways we perceptually categorize the world — some stimuli in our experience are spontaneously perceived as persons, women, faces, etc. while others are not. For example, if we look at a peanut, we could not normally construe this as a person through sheer effort of our will.

The definite description in question, however, also has a reading on which it is a purely grammatical term. In this case, unlike the former, there cannot be a fourth, fifth, or sixth person. Rather, there are essentially three grammatical Persons and they are universally organized in such a way that they co-occur as a system. Thus there is no language in which everyone at all times is a 'you' and no one ever refers to himself as 'I' (whether through the pronoun or grammatical Agreement marked on the verbal inflection). And, in discourse, wherever there is a person addressed as 'you' or referred to as 'he', there is also a person doing this addressing and referencing while referring to himself or herself in the first Person. All three of these grammatical Persons can be present either explicitly ('I command *you* to leave *him*'), or implicitly, as in 'You will leave him!', where the

¹ Throughout this paper we will be preferentially using the term 'autism spectrum conditions' rather than 'autism spectrum disorders' in line with the perspective that autism reflects a set of cognitive differences rather than deficits.

first Person is that of the implicit epistemic subject making this judgment, or in ‘Leave!’), where the imperative is second-Person-directed, and put forward by the first Person.² The occurrences and co-occurrences of the different grammatical Persons are governed by grammatical constraints that are systematic rather than language- or culture-specific, illustrating that distinctions of Person in this second sense *are* indeed highly grammaticalized: they are part of the grammatical system of human languages and subject to its intrinsic constraints.³ Contrary to what a current near-exclusive focus on the (usually *lexical*) semantics and pragmatics of pronominal reference in philosophy entails (see Section 4–5), pronouns and the Person distinctions they paradigmatically involve are *grammatical phenomena*.

It is independently clear that this second concept of Person is not a *perceptual* one. We may look at a person and realize that she is a person, but this will say nothing about whether we (or she) will refer to her(-self) in the first, second, or third grammatical Person: perception cannot make these grammatical distinctions. Secondly, what can be a *grammatical* Person is not *perceptually* or *lexically* constrained. Thus although our lexical understanding of the concept PEANUT clearly does not suggest personhood and neither does a visual image of a peanut, it is unproblematic for children or adults to

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- ² The person referring to him/herself in the third Person can overtly make reference to herself in the grammatical third Person, of course, as in the case of honorifics (e.g. the queen referring to herself in the third Person: ‘Her majesty disapproves...’; German ‘Du/Sie’) or ‘imposters’ (Collins and Postal, 2011), where a third Person is grammatically present and yet reference is to the speaker/writer: e.g. ‘This reviewer has not found the argument of this paper convincing.’ The person referring to herself in the third Person is not in these instances confused over the fact that she is a first Person, and Collins and Postal (2011) provide empirical evidence that the grammatical first Person is indeed present structurally as well in these cases.
- ³ For example, a broad (though not exceptionless) typological generalization is that third-Person pronouns (he, she, it) carry grammatical Number (Singular, Plural) and Gender (Male, Female), but no Person, whereas the personal pronouns (first and second) carry Person but no Gender, and arguably no Number (Benveniste, 1966); secondly, while definite descriptions and third-Person pronouns can both be anaphoric, the personal pronouns do not lend themselves as easily to such uses (Hinzen and Sheehan, 2013, Chapter 4); third, pronouns can be non-overt, when and because their meaning is governed grammatically; fourth, third-Person Romance accusative clitic pronouns lend themselves to predicative and quantificational interpretations, while Dative ones arguably are always referential and require a personal interpretation (Martin, 2009); fifth, occurrences of clitic pronouns with different grammatical Persons are governed by the Person Case Constraint, which says that when Accusative and Dative clitics co-occur, the latter must occur before (‘higher’) than the former (Perlmutter, 1971).

understand that someone introduced to them verbally as 'Mr. Peanut' (a well-known advertising mascot and character of American popular culture) is a person, not a peanut, though looking like a peanut.

What is the mechanism behind this understanding of an inanimate object as a person? We could provide help to our cognitive system perceptually by giving Mr. Peanut person features (e.g. arms and legs, or a face and smile) — i.e. by exploiting the non-grammatical Person concept and introducing the perceptual features by which it can be triggered. But this won't be sufficient to give Mr. Peanut grammatical Person features: again, a visual presentation of a person-like peanut will have no implications whatsoever for whether this 'person' will refer to himself or herself in the first, second, or third grammatical Person. A mechanism to accomplish this — and the only one — is grammar. In fact, the very moment that we refer to a peanut-like person as 'Mr. Peanut', the matter of grammatical Person is settled: 'Mr. Peanut' is a third-Person referential expression, and its referent becomes a referent in the grammatical third Person as and when he speaks. It is from the grammar in this case that we know we are dealing with a person, not a peanut, for in the expression 'here is Mr. Peanut' the lexical item PEANUT does not function grammatically as a common noun (as in 'a peanut'), but as a personal proper name.⁴ The two person concepts must be carefully distinguished and, as noted above, in what follows 'Person' with a capital will solely denote the grammatical concept.

The proper domain in which Person is interpreted is *speech* (or sign). Thus, in the following dialogue, I am grammatically third when and as long as I speak, while you are second Person when and as long as you speak:

- (1) [me:] I love you.
- (2) [you:] I love you too.

There is strong evidence that these Person distinctions are preserved in *self-talk* (self-directed speech) as well. Thus I can mutter (3) declaratively, in a matter-of-fact sort of way:

⁴ As Nieuwland and van Berkum (2006) have shown in an electrophysiological study, when the linguistic context is set up in such a way that peanuts are persons grammatically and in the linguistic context, the brain finds nothing odd in a statement such as *The peanuts were madly in love*; and pointing to Mr. Peanut while saying 'This is a peanut' or 'I want to eat this peanut' would be positively odd.

- (3) I am an idiot.

The *affective* exclamation in (4), on the other hand, made while looking into a mirror, crucially involves the second Person as distinct from the implicit speech subject (the third Person), and the first and third Persons are illicit in this instance in English (*cf.* 5–6):

- (4) You idiot!
 (5) *I idiot!
 (6) *He idiot!

Similarly, I can utter the affective (7), and in this case (8), with reverses to the two grammatical Persons involved, is again strongly ungrammatical (see Holmberg, 2014):

- (7) I hate you!
 (8) *You hate me!

In short, we need to witness the *speech act* as and when it takes place in order to interpret the grammatical Persons. They reflect a semantic dimension of speech content to which the speech act itself is essential. It is crucially *not* enough to know who **acts** when: an *action*, as such, involves agents and (often) patients, but it implies nothing about Person distinctions. The perception of agency is an evolutionary ancient mechanism, and an agent as such can be referenced in *any* of the grammatical Persons, in none, or in two at the same time (as in the examples above) — this will depend on how (and whether) he is referenced in speech (his own or that of others). Just as it is not enough to know who **acts** when, it is also not enough to know who **speaks** when: what matters is how we **refer**, in speech, on an occasion, to such a speaker — again, a speaker as such can be referred to in any grammatical Person. This choice of Person changes the grammatical meaning: (9) and (10) do not mean the same, even if I am the speaker and am called Tom:

- (9) The speaker/Tom sings.
 (10) I sing.

In my utterance of (9) I could refer to anyone using the definite description ‘the speaker’, and even if I use ‘Tom’ and this is my name, I could refer to any other person called ‘Tom’. This referential ambiguity disappears in (10), in which the use of the first Person in speech induces a *relational interpretation* that we can paraphrase as follows:

- (11) For an event e of singing and speech event e' , the agents of e and of e' are the same, as and when e and e' takes place.

More briefly: the singer (subject of 'sing') and the speaker (subject of the speech act as such) are the same. I could be in a circumstance in which I know that a person referred to as 'Tom' is singing. And yet I may not know that *I* am singing. This illustrates how Person distinctions arise in how we *refer* to Persons on an occasion of speech and that a distinction in Person captures relational information about the world relative to speech acts taking place in it. We note next that it is the concept of the grammatical first Person that has played a fundamental role in philosophical enquiry.

3. Person in Philosophy

As Chalmers (1996, p. 17) puts it, 'both the psychological and the phenomenal are real and distinct aspects of mind. At a first approximation, phenomenal concepts deal with the first-person aspects of mind, and psychological concepts deal with the third-person aspects'; Ninan (2010, p. 551) writes that *de se* thought takes place in the 'first Person way'; and as Shoemaker (1994, p. 7) puts it, 'some would say that the philosophy of mind without the first-person perspective, or the first-person point of view, is like *Hamlet* without the Prince of Denmark... or like *Othello* without Iago. I say both'. It is clear that the notion of 'the first Person' used in all of these quotes is the grammatical one. Yet, this is rarely reflected upon, and the topic of discussion is routinely taken to be something else, such as phenomena referred to under such non-grammatical labels as 'subjectivity', 'consciousness', or a special kind of 'perspective'. None of these notions are, *per se*, grammatical ones. If they capture what matters in this discussion, maybe grammar can therefore be ignored, as can Person distinctions. This conclusion, however, would be premature. In particular, there is nothing *per se* 'subjective' about the thought expressed in (12):

- (12) I am depressed.

A person might arrive at this conclusion after long reflection on her experience, perhaps supported by clinical data. It would then capture a fact about this person. Where the self-ascription of properties lacks this feature of objectivity, as in the case of a propositional delusion in schizophrenia of the sort in (13), the very problem is that something *becomes* 'subjective' that, by the nature of its grammatical form,

would normally be understood as an objective claim, which as such carried information about the world:

(13) I am Napoleon.

Subjectivity in first-Person thought as expressed in declarative is in this sense an indication of *pathology*, and is far from being an intrinsic *feature* of such a thought. Grammatical Person interacts with subjectivity, but it is not the same thing and the two topics should not be run together. Similar remarks apply to the notion of ‘perspective’, a notion too generic and unspecific to capture Person distinctions and hence the first Person one. Thus I may have a problem with the empathy required to feel pity for a person who has been insulted. But empathy does not require, nor does it entail, the specific deictic frame in which normal language use takes place, namely the triangle involving the grammatical first Person engaged in a speech act, the second Person being addressed, and the third Person (or non-Person) talked about (the ‘he’ or ‘it’).⁵ In fact, the notion of ‘perspective’ as such entails no grammar at all — or else, if it does, the notion of perspective is implicitly understood in a grammatical fashion, and hence not explanatory for such Person distinctions, which have to be *added* to the (lexical) notion of a ‘perspective’ in order for it to capture the phenomenon in question. The same applies to the generic notion of ‘self-reference’, which is equally found in some forms in non-humans and which even in humans does not as such entail anything about whether a person referring to herself will do so in the first Person or another one; and to the notion of a ‘subject of one’s experience’, which once again can be referred to in any grammatical Person, and with or without invoking lexical concepts (e.g. ‘the person thinking these thoughts’ vs. ‘I’ or the first Person marked through grammatical Agreement only). In sum, whatever such generic notions could be useful for, they are of little use in clarifying the first Person and its role in human-specific thought.⁶

Acts of reference in the neurotypical deictic frame involve knowing that another thinking being’s thoughts are not my thoughts, and that the thoughts of both him/her and me are to be distinguished from what

⁵ Accordingly, a lack of emotional empathy as in the case of a psychopath implies little for his use of pronouns, as one referee correctly notes. According to Baron-Cohen (2012), psychopaths lack emotional empathy but they have cognitive empathy, while the reverse is true for autism spectrum conditions.

⁶ We thank one referee for clarifying this paragraph.

is the case (the 'world' or 'it'). Such thoughts involve lexical concepts, which typically function grammatically as predicates and apply to objects in such a way that their applying to an object is not decided by whether the first or the second Person thinks that they do: I am human or I am not, whether or not I think I am human or I am not human. These species-specific features of our deictic frame — the infrastructure in which human referring and thinking takes place — are not captured by generic notions of 'perspective-taking' or 'mind-reading': chimpanzees and other species can do rudimentary forms of either — if these notions are understood in sufficiently broad senses — yet inhabit a different deictic frame (Heyes, 2014). The need for specificity in characterizing a human-specific deictic frame suggests that we need to invoke the three-fold Person distinction that grammar makes available. We now argue that standard cases of essential indexicality support this perspective.

4. The Essential Indexical

A long tradition in philosophy, linguistics, and formal semantics has centred on the special behaviour of deictic pronouns, identifying the latter as 'indexicals' and understanding these as a special lexical class whose semantic values and/or pragmatic usage suggest their 'essential' indexicality, in the sense that non-indexical forms of reference cannot be substituted for them. Essential indexicality is closely related to what is also normally characterized in non-linguistic terms, namely '*de se* thought': in first approximation, thought about oneself as oneself. To illustrate this distinction, consider the classical case of Rudolf Lingens, the amnesic academic who is lost in the Stanford library after closing hours. Reading books available to him, he reads a lot about an academic called 'Lingens', including (14):

(14) Lingens is at Stanford.

Yet he doesn't know (15), which is because he doesn't realize (16):

(15) I am at Stanford.

(16) I am Lingens.

His thinking about himself is in this sense not *de se*, though it is clearly about him, in a purely semantic sense that ignores grammatical Person distinctions. Relatedly, Kaplan (1977/1989) invented the famous case in which he observes (17), shortly before he realizes (18):

(17) This guy's/His pants are on fire.

(18) My pants are on fire.

Now, purely descriptively speaking, the most obvious difference between the pairs in (15–16) and (17–18) is one of grammatical Person, which shifts from third to first Person in both as we observe the shift from *de re* to *de se* self-reference. Yet it is standardly captured as a case of ‘essential indexicality’ interpreted as a non-grammatical phenomenon, as discussed shortly. Could grammatical Person, whether invoked in thought or language, be the key to understanding essential indexicality and the *de se*?⁷

Consider John, who is intoxicated and sits in his chair watching a documentary on TV about a war hero. Ironically, this person is himself, though he fails to realize that. In this circumstance, watching this scene we could comment (19) using a third-Person pronoun to refer to him:

(19) John thinks that he is a war hero.

It is widely accepted that (19) could seek to attribute a *de se* thought, but that it need not; indeed, we may conclude (19) from John’s behaviour, and the thought that the guy on TV is a war hero may not actually have consciously occurred to John, even if it is clear to us from his behaviour that he would assent to it when prompted. Even if it has, we could stress ‘he’ as a deictic pronoun and utter it accompanied by a gesture pointing to the guy seen on the TV, in which case the reading could clearly be *intended* to be *de re* only. Without such stress, the attribution of a *de se* thought can be strongly suggested pragmatically and likely to be inferred, but it is not semantically enforced, as the fact suggests that we could utter (19) ironically, exploiting its actual semantic structure: *John thinks that he, John, is a war hero*. Now note that, while inferentially invited in (19), the option that John thinks *de se* he is a war hero becomes strictly a non-option when the thought ‘he is a war hero’ is attributed to the subject as identified in the first Person:

(20) I believe that he is a war hero.

⁷ We are not able to address a frequently invoked language–thought dichotomy here, except for noting that language is always integrated with thought, and that thought, of the kind relevant here, in turn requires internal articulation — including grammatical features like first vs. third Person, since thought is intensional and thought identity changes with the parts it contains.

As uttered by John this is *de re* only. When there is grammatical Agreement of this first-Person feature *across* the matrix and embedded subject positions, in turn, the result is *de se* only:

(21) I believe that I am a war hero.

This pattern is as expected on an account of essential indexicality as inherently grammatical and related to Person distinctions as appearing in appropriate grammatical configurations. As *we* might capture the fact in (20):

(22) John doesn't know that he is him.

Here 'him' is infelicitous (incomplete) without an accompanying deictic gesture (which will typically be to the person as seen on screen), while 'he' may or may not come with such a gesture. If it does, the pointing accompanying 'he' is naturally to John as sitting in his *chair* — demonstrating disjointness of reference, similarly as in John's own utterance (23), where the disjointness indicative of the *de re* scenario is enforced by a grammatical Person distinction:

(23) [John:] I am not *him*.

The idea that obligatory *de se* and *de re* will co-vary with grammatical factors, on the other hand, is contradicted by the classical claim that so-called 'obligatory control' enforces a *de se* reading, irrespective of Person (see, for example, Hornstein and Pietroski, 2010). This classical claim is illustrated by (24), which *lacks* any first-Person morphology and is often claimed to have an obligatory *de se* reading:

(24) [me:] John expects PRO to get a medal.

Here PRO is the non-overt but implicitly understood grammatical subject of the embedded clause, which in this case necessarily co-refers with the matrix subject 'John' (i.e. it's *John* who expects to get a medal). Fortunately for the present account, however, this claim is arguably incorrect as also noted in Cappelen and Dever (2013). Thus imagine us looking at the scene above with John in his chair, and he says: 'he'll get a medal for sure', pointing to the person on screen. I say: 'How funny! John expects to get a medal!' The *de re* reading is

not only available now but intended.⁸ By contrast, the *de se* again enforced in (25):

(25) [John:] I expect PRO to get a medal.

Hence, again, it is the use of the first Person in both the matrix and embedded subject positions which draws the line between the *de re* and the *de se*. Use of the first Person is not only necessary but it also appears sufficient.⁹ For putative evidence against sufficiency, let us turn the embedded non-finite clause in (25) into a grammatically more complex finite one, as in (26), in which case an overt embedded subject is now required. If this subject is in the first Person, the *de re* is still not optional:

(26) [John:] I expect that I will get a medal.

Let us, however, put the matrix verb into the past tense:

(27) [John:] I expected that I would get a medal.

John could utter (27) in a circumstance where he is reflecting on a past episode where he saw the guy on screen without realizing it was himself. Stunned by his error, he now utters (27), likely with contrastive stress on the second ‘I’. Uttered in this exact circumstance, (27) could have a *de re* reading — though it is crucially a ‘*post hoc*’ one, in the sense that John can only formulate it *after* he realized his error and there is a clear psychological distance between him now and the person whose thinking he reports. The *de re* reading is thus not a pure one, and there is, in fact, full cognitive transparency by the time of the utterance. Moreover, we suggest that this *post hoc de re* reading is quite expected given that the matrix past tense shifts temporal reference away from the speech time, and the temporally more independent (finite) embedded clause depicts a fantasy that John imagines his past self to have. That is, the grammatical structure facilitates the self-distance required. The fact that we have two lexically overt subjects,

⁸ The idea that this is a pragmatic effect is contradicted by the fact that PRO is strictly part of the compositional semantic structure of the utterance in question.

⁹ We agree that (24) will often trigger the inference that a *de se* thought is being reported. Our point is that this is not only not necessarily so, but that, to the extent that it is, there is a grammatical explanation for this again: if obligatory control into embedded subject conditions simply is movement, and there is only one referential determiner phrase (DP) of which one is a non-overt copy (Hornstein and Pietroski, 2010), the possibility of some disjointness of reference is not as easily recognized.

unlike in the non-finite case, supports this possibility too: while a non-overt PRO will necessarily be *referentially dependent* on the overt noun phrase that 'controls' its referent, a second overt subject in the embedded clause will allow for *new* referential possibilities. Note further that where there is lack of Person agreement of the two subjects, as in (28) and (29), the option of the *de se* completely disappears, *despite* the presence of the first Person in either the embedded or the matrix position:

(28) John expected that I would get a medal.

(29) I expected that John would get a medal.

This makes it again clear that the phenomenon is not merely one to do with grammatical first Person, but that it is a grammatical one in the further sense that it depends on grammatical Agreement *across* two clausal subjects. The *de se* is not a lexical phenomenon and not a pragmatic one either.

A grammatical signature of self-reference in the relevant *de se* sense can also be seen as we replace a control verb such as 'expect' with a so-called 'raising' verb like 'seem':

(30) **It** seems that **I** am depressed.

(31) **I** seem to be depressed.

(30) easily lends itself to an 'objective' reading: it could be uttered by me when I am confronted with clinical data clearly suggesting a state of clinical depression. 'Oh,' I might state looking at these data, 'it seems that I am depressed.' This reading approximates one where the statement is effectively about 'whoever the guy is' whose data are being contemplated: the *de re* case. (31) lends itself to this reading less easily: the person uttering (31) is more likely in a state of being confronted with the depression itself experientially. A technical grammatical difference between raising and control would explain this. Thus a standard textbook derivation of (31) would be that 'I' is first generated as the subject of the embedded clause:

(32) ... seem [I to be depressed].

Then this same subject moves to the matrix position, yielding a complete sentence:

(33) I seem [__ to be depressed].

Therefore, the two subjects are the exact *same* lexical item, which is identical across the two positions: referentially, the experiencing

subject and the one being depressed are the same. In the derivation of (30), on the other hand, there are two distinct grammatical subjects.

In sum, there are four cases, all of which involve first-Person agreement in matrix and embedded positions but differ grammatically otherwise: 1. Finite clausal embedding with two lexically overt subjects (27); 2. Non-finite clausal embedding with a PRO subject whose reference is controlled by the (independent) matrix subject (25); 3. Non-finite clausal embedding with an embedded subject and an expletive matrix subject (30); 4. Non-finite clausal embedding with an embedded subject that has moved to the matrix position (31). The embedded clause proves to be semantically most independent in the first case, as we would expect from the fact that it has its own finite Tense and a lexically overt embedded subject. It is less independent where there is a subject but no finite Tense in it, and the subject has no phonological content (the case of controlled PRO). It is least independent where one of the subjects is an expletive or the subjects of the two clauses are *de facto* the same. We predict on our position that the *de re* option will become less available the less clausal independence there is: in other words, the more dependent the embedded clause is on the matrix clause, the less room is there for referential disjointness in the above sense, which gives rise to the *de re*. This prediction seems to be confirmed by the linguistic data.

Overall, these results make it unlikely that we can credit essential indexicality or *de se* thought to any lexical or pragmatic factors: the phenomena in question are grammatical essentially and co-vary with specific forms of grammatical complexity. We will seek to confirm this conclusion in what follows.

5. Against Non-grammatical Accounts of Essential Indexicality

5.1. *Is essential indexicality lexical?*

Rather than appealing to grammatical Person and configurations, could we have appealed to some special *lexical* properties of a particular class of words, i.e. ‘indexicals’? The immediate problem with a lexicalist view is that in (17)–(18), repeated here as (34)–(35), ‘this’ and ‘his’ are indexicals as much as ‘my’ is:

(34) This guy’s/His pants are on fire.

(35) My pants are on fire.

The problem therefore is not one of indexicals as such, but of the grammatical Person specified on them. A second immediate problem is that no so-called indexical lexical item *needs* to be indexically used, and that, if it is so used, we can directly predict this from the *grammar* of its occurrence and cannot predict it from anything else. Thus consider (36)–(40):

- (36) John likes **his** pants.
- (37) When I hire a manager, **she** must be bilingual.
- (38) He is a **she**.
- (39) This is so **you**.
- (40) I am **me**.

In (36), 'his' is grammatically in a position 'c-commanded' by its possible antecedent, i.e. 'John', and is naturally interpreted anaphorically rather than deictically. In (37), 'she' can have a quantificational rather than referential reading, given that it can act as a bound variable for the noun phrase occurring in the adjoined clause. In (38), 'she' is in the position of a grammatical predicate, which denotes the property of being female. In (39), 'you' is in the position of a sentential predicate, similarly to the way that an adjective would be in the same position, and hence is again not referential. The same applies to (40), which is uttered by Hugh Grant in *American Dreamz* to express the fact that he is not the kind of guy his girlfriend wants him to be, but the kind of guy he is: 'me' is again predicative.

The third problem with the lexicalist view is that there is, in fact, no such class as that of 'indexicals' in any human language, as has long been known in the linguistic literature (Roca, 1992; 1996; Cardinaletti and Starke, 1999; Déchaine and Wiltschko, 2002; or Martin and Hinzen, 2014, among others). Apart from the problem already discussed, i.e. that the term 'indexical' indicates a way in which a particular lexical item can (but need not) semantically *function* depending on its grammatical position, the putative class of 'indexicals' comprises elements of very different *types*, all of which interact with grammatical principles in a number of different ways. Thus, above we have already encountered pronouns without lexical-phonological content (PRO), expletive pronouns with minimal such content (expletive 'it'), and overt pronouns. In addition to that, there are clitic and non-clitic pronouns, which again differ in their lexical 'weight', with the former attaching to words that host them rather than remaining independent words, and being in this sense more grammatical than lexical. Within the domain of clitics, we find clitics

with a whole range of interpretations, which range from purely predicative to quantificational forms of reference, to rigid, deictic, and finally to personal ones. *None* of these are lexically given, and *all* of them directly interact with grammatical factors, as e.g. in the case of predicative clitics, which bear no structural case (Nominative, Accusative, Dative), clitics that do bear Accusative Case and can but need not be referential and/or deictic, and Dative clitics, which are always referential, deictic, and personal (Martin and Hinzen, 2014).

The fourth problem with a lexical interpretation of essentially indexical reference is more fundamental: referentiality, of which essentially indexical reference is an instance, is simply *never a lexical fact*. This becomes obvious in the simplest examples:

(41) MAN.

(42) the man.

(41) is a lexical item (concept, word). (42) is no lexical item: it is not listed in the English lexicon. (41) cannot as such be referential, but (42) can be, as in ‘the man entered’. More generally, a purely lexical concept such as (41) cannot, by itself, support any such distinctions as whether we refer to a specific man as opposed to any man, this man as opposed to that, the man we met yesterday, manhood, mankind, or men in general. Therefore, referentiality falls on the side of grammar, not the lexicon — even though, crucially, any of the kinds of acts of reference just illustrated involve a lexical item, and indeed the exact same one. Indexical reference cannot possibly be lexical when no word ever is, and when the indexicals in question have less lexical contents than any other words — and lose this content, becoming more grammatical, in the case of clitics and PRO discussed above.¹⁰ We conclude from these four points that essential indexicality is not lexical, any more than it can be purely pragmatic.

¹⁰ It is commonly maintained that the claim of this paragraph is falsified by the class of proper names, given the view that these, in and of themselves, are ‘rigidly referential’. This claim is clearly false, however, since we can only tell from the grammar whether something is used as a proper name. Thus all proper names can be common nouns, as in ‘There are many Maries in my class’ or ‘I’ve never been in love with a Mary’, and in turn all common nouns can function grammatically as proper names, as in the case of Mr. Peanut or a child named ‘Pomme’ (apple) (see Hinzen and Sheehan, 2013, Chapter 4, updating the tradition of Longobardi, 1994; see also Hinzen, 2007; Borer, 2005).

5.2. *Is essential indexicality semantic?*

We have already seen that this cannot be the case: the relevant forms of semantics only arise in the appropriate grammatical configurations, and therefore they are at least not non-grammatically semantic, arising instead in what we may call 'grammatical semantics' (Hinzen and Sheehan, 2013). Moreover, standard textbooks in the philosophy of language make very clear that the basic notion of semantics is word-based, i.e. lexical.¹¹ In this sense, too, essential indexicality could not be called a semantic phenomenon. Let us specifically consider, however, what is currently the most dominant semantics of indexicals. Kaplan (1977/1989), contradicting the prior Fregean tradition, interprets indexicals as expressions that are directly referential semantically, while lexically encoding a 'character'. The latter is crucially not part of the semantics of the expression but represents its 'cognitive value'. Hence (43) and (44) will have exactly the same semantic content, while differing in character:

(43) Lingens is at Stanford.

(44) I am at Stanford.

Put differently, there is one referent, call it R, and there are these two ways of referring to it, which are cognitively different because of the character involved. Now, what is a character? It is said to be a conventional 'rule' governing an indexical's evaluation with regards to a given context, *c*. Formally, the 'semantic value' associated with the word 'I' (at a lexical level) is a function c_a , which maps a token of this word to an agent, relative to a world of evaluation, *w*, as well as a context, *c*:

(45) $[[I]]^{c,w} = c_a$

As Kaplan puts the content of this rule, it specifies that 'I' 'refers to the speaker or writer of the relevant occurrence of the word "I", that is, the agent of the context' (*ibid.*, p. 505). All words have characters lexically associated to them. Indexicals differ simply because their

¹¹ E.g. Lycan (2008) discusses meaning almost exclusively in the context of discussing the meaning of words. These are standardly taken to be devices of reference, directly contradicting the evidence that reference is never lexical. In so far as meaning and reference at a grammatical level are considered, the essential notion is semantic compositionality, which means that the notion of meaning *remains* lexical: sentence meaning arises by 'composing' word meanings.

characters are non-constant functions: they map the relevant words to different referents in different contexts, e.g. Bill in one, John in another, Mary in a third.

If we take the above as an explanatory account of essential indexicals, however, it faces the following objections. Firstly, the particular rule above for the use of 'I' is the wrong one: 'agent of the context' is the wrong notion to have if it's the referent of 'I' that is to be determined. Thus I may well know or inspect who **acts** in a given context (e.g. Lingens), and yet not know who is **me**. In fact, the non-linguistic (external) context *cannot* provide the right distinction: the first-Person self is, by its nature, not an object of my experience that I can empirically discover in such a context. The Lingens case illustrates this, but a clearer case is the clinical symptom of auditory verbal hallucinations (AVH), which affects about 70% of all patients diagnosed with schizophrenia: patients hear speech about or directed at them, even though there is no speaker. While the speech is heard (so there is a speech agent recognized), the patient does not know who is speaking or the speaker is determined to be some third Person. The voice, in other words, is self-generated by the patient, but its source is obscure or in the wrong Person. This illustrates that we can observe speech while not knowing its grammatical Person — a disturbance in the deictic frame in the sense above.¹² Therefore, knowing who the agent of the context is or even who is speaking may not yield the right distinctions or the knowledge we seek. The right distinctions are grammatical ones, and neither Kaplan's semantics nor his level of character substitute for or illuminate these grammatical distinctions. We thus suggest that they are grammatical essentially. By unveiling the grammatical dimension of reference *de se*, we have hit rock bottom. The first Person is a grammatical phenomenon, and this is it.¹³

Kaplan's semantics also makes a wrong prediction, which arises from its crucial stipulation that indexicals are *contextually ambiguous*

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- ¹² Note that lexical knowledge/semantic memory is relatively unimpaired in the 'ipseity' disturbance (distortions in the sense and integrity of selfhood) that schizophrenia represents. This is further reason for concluding that essential indexical is not lexical. If it was, there would be no reason why the patients in question could not simply learn the relevant lexical rule/character. Note also that problems with pronominal reference and Person go beyond the symptom of AVH in schizophrenia (McKenna and Oh, 2005).
- ¹³ As a referee notes, this does not prejudice the broader question of whether grammatical organization as such can be explained in more fundamental terms not presupposing grammatical terms. This foundational question concerning the basis for grammar itself falls outside of the scope of this paper.

referential expressions, which are otherwise *like* proper names in terms of their semantics. If so there is a *single referent*, R, and two *ways of referring* to it, one contextually ambiguous, the other not, which differ in the values of the Person feature (Figure 1):

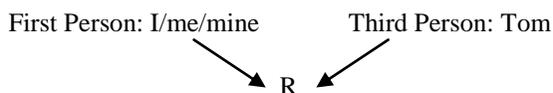


Figure 1.

The difference between co-referential indexicals and proper names, that is, would be one of context but not of reference, and the semantics (in the sense of the language–world relation) would be exactly the same. Grammatical Person is irrelevant to either the context or the referent, and it is not specified as part of the character either (which is a lexically specified concept or rule, viewed as a non-linguistic, abstract object characterizing an aspect of ‘cognition’). The prediction therefore is that if we got rid of Person, nothing relevant in semantics (or even cognition) would change. No object of reference would be missing, and if we only ever used proper names (i.e. third-Person expressions) to refer to any of them, then we would not be missing anything essential to the structure of either meaning (or cognition).

We suggest that this prediction is very unlikely to be true, based not only on evidence for the inherent involvement of the grammar of Person in reference *de se* above, but also on evidence from at least two mental health conditions, autism spectrum conditions (ASC) and schizophrenia. In both of these, the system of pronominal reference, which is paradigmatically sensitive to distinctions of grammatical Person, is often particularly affected. In both syndromes, too, there are fundamental cognitive changes, and a different cognitive phenotype is seen to appear *together* with an altered linguistic profile. These problems with pronominal reference, moreover, may shed light on the aetiology of the cognitive changes in question, if we view them as disturbances of the deictic frame, as independently suggested for the case of schizophrenia by Crow (2010) (see further Hinzen and Rosselló, 2015; for the case of ASC, see Hinzen *et al.*, 2015, and below). The system of grammatical Person is therefore unlikely to be contingent or peripheral to the structure of meaning or how we use language to refer. Eliminating Person would *matter* to the semantics and change our cognitive type.

The significance of Person for the semantics of personal pronouns can be objected to as follows.¹⁴ The Person distinction in our two ways of referring depicted in Figure 1 does not matter to the referent R in question. R, the objection goes, is a *person*, and indeed the exact *same* person in the case of first- and third-Person reference to it. Therefore, the referent R can be identical even if the grammatical Person chosen in referring to R is different, and grammatical Person distinctions do *not* matter to the semantics. This objection fails, however, if nothing could be a person that didn't refer to itself in the first Person. In that case, there only *is* such a thing as R (in the relevant human-specific sense) if we build a grammatical Person distinction in how R refers to itself into our conception of R. But then, in allegedly distinguishing the referent R from the ways of referring to it, we have circularly invoked the grammatical distinction in defining what R is. Therefore, when identifying R we cannot in fact abstract from the distinction of grammatical Person involved in referring to it. A first-Person referent *cannot* be identified with a third-Person referent.¹⁵ The former will be uniquely linguistic and grammatical, in so far as we cannot translate grammatical Person distinctions into any non-linguistic terms. But the latter need not be: we can have perceptual access to third-Person individuated objects as well, and we can investigate them in purely physical rather than linguistic terms.¹⁶

Even if the crucial factors in essential indexicality are not pragmatic, lexical, or non-grammatically semantic, as we have argued in this section, they could still be 'cognitive' in a non-semantic and non-grammatical sense. That they must be is an entailment of the Kaplanian approach, where the difference between first- and third-

¹⁴ The objection was kindly brought to our attention by Lynne Rudder Baker.

¹⁵ A referee worries that, if this were true, 'I could not be able to say "I am [my name]"'. However, although natural language approximates forms of identity that we can state in the languages of logic, copular clauses never encode identities in this sense but retain an asymmetry (see Moro, 1997), with one noun phrase being the grammatical subject and a referential expression, and the other a predicative one. We acknowledge the general desire to keep questions of metaphysics and of language/reference apart, but our argument implies that, at least in the case of the first Person, the form of reference involved is not contingent to the object referenced.

¹⁶ It seems to us that this conclusion is at least consistent with, if it does not indeed support, E.J. Lowe's (2008) conception of personhood, which associates two different 'substances' to selves and their bodies. The technical metaphysical notion of 'substance' does obviously here not mean the same as 'entity' or 'object', and this consequence follows for free from our account, given that selves in this sense are uniquely linguistic entities.

Person forms of reference will essentially lie in the 'character' or 'cognitive value' involved. But we have already challenged the assumption that the relevant rule or character for evaluating the first-Person pronoun can be specified without invoking distinctions of grammatical Person. If so, we achieve nothing by positing a special layer of characters: in specifying them, we will simply have to re-state the grammatical distinctions. Moreover, we have argued that indexicals do affect the semantic structure of natural language and hence do not merely reside at a cognitive level posited as distinct from this semantic one.

There are other objections to a non-grammatical cognitive approach. Thus suppose the special behaviour of personal pronouns would be explained by appeal to particular lexical semantic values associated with them, which would correlate with how they are cognitively processed in a way distinct from other referential expressions. Then the next question would naturally be: why do personal indexicals *have* these special semantic values? Surely this cannot simply be an accident or arbitrary convention that we happen to find in all of the world's languages. So it will need to be *explained*. This need not matter if we are in the business of formal semantics, where we may simply be interested in what the semantics of indexicals *is* and how to state it formally. But if we wish to go beyond semantics as a formal science and ask explanatory questions, the one just raised is fundamental. Martin and Hinzen (2014) offer an account of the forms of reference in which both proper name and indexical reference fall out from the way in which, as grammatical complexity increases in the structure of complex nominals, the relevance of lexical descriptive content in mediating reference decreases, giving rise to rigid and indexical forms of reference (for details that we cannot provide here, see Hinzen and Sheehan, 2013, Chapter 4). Indexicals on this account are not merely contextually sensitive referential expressions, whose referential behaviour is like that of proper names except in a context-sensitive way. They rather instantiate a different form of reference, which is part of an inherent progression towards more grammaticalized forms of reference that we see in the world's languages.

In the final section we follow up on a prediction that our approach makes: in mental health conditions characterized as involving cognitive changes and changes in the integrity of selfhood ('ipseity'), grammar and the system of Person should be distinctly affected. We will focus on the case of ASC, and summarize evidence available today that autism, as an altered cognitive type, involves linguistically

specific anomalies, which specifically concern the grammatically mediated referential system.

6. The Linguistics of Autism

The autism spectrum consists of a diverse population of persons who meet threshold-level requirements for communication and social interaction difficulties as well as repetitive behaviours and restricted interests. Autism is categorized as a pervasive developmental disorder according to international guidelines, including the DSM-V and ICD-10. As such, symptoms are present from early childhood onward and permeate cognition in a broad sense, rather than affecting any one specific aspect. For the past 15 years or so, many researchers in the field have begun to shift away from understanding autism as a series of core deficits to core differences, culminating in a different ‘cognitive style’ (see Happé, 1999, for development of this argument). Indeed, researchers such as Simon Baron-Cohen forgo the clinical term autism spectrum disorders (ASD) for autism spectrum conditions (ASC), the term that we employ here too. However, it has generally been presumed that language problems are not at the core of the symptomatology. For example, in diagnosis, autism can be specified with or without accompanying language impairment. By focusing our lens to the linguistic profile of the autism spectrum, we aim to garner greater insight into the linguistic mediation of human-specific personhood and how cognition may pattern with grammatical distinctions as are involved in the Person system.

The first documented cases of autism were compiled in a series of case studies by psychologist Leo Kanner in 1943. There, Kanner described children who showed what he termed *severe autistic aloneness*, thereby conceptualizing autism as a kind of separation of the self from others. Kanner interpreted the behavioural symptoms as an *affective* disorder with the root cause possibly attributable to un-warm home environments. However, as more cases of autism were noted, the parental blame subsided and indeed the conception of autism began to shift. By the late 1980s autism was reconceived as a cognitive disorder (e.g. Baron-Cohen, 1988) with social and communicative deficits primarily grounded in a ‘mind-blindness’ account, which proposes that individuals with autism have difficulty understanding that the mental states or beliefs of others may be different from their own. Although language abnormalities are cited throughout the literature, including pronominal reference as mentioned above, they have

generally been considered to be secondary symptoms of pragmatic deficits that stem from problems understanding the context of speech and which imply understanding mental states and social norms. The clinical basis for diagnosis has also undergone substantial changes over the years, notably in the recent consolidation of the previous symptomatic triad of impairment categories — social deficits, communicative deficits, and restricted interests and repetitive behaviours (RIRBs) — into a duo of (i) social-communicative deficits and (ii) RIRBs. This, in part, was motivated by the systematic patterning together of social and communicative deficits. This is furthered by the sizeable number of cases of 'atypical' autism in which either social-communicative symptoms or RIRBs are not present or are below threshold levels, and in which RIRBs are more likely to be absent (Mandy and Skuse, 2008). Therefore it follows that, while clearly RIRBs are present in a wide percentage of autism cases, the social-communicative deficits are the most widely shared across the entirety of the autism spectrum.

Recently, fine-grained linguistic studies have found syntactic abnormalities across the autism spectrum, which go beyond what one would expect from a pragmatic deficit alone, or a failure to take an interlocutor's 'perspective' into account (see Eigsti, Bennetto and Dadlani, 2007; Durrleman and Zufferey, 2009). If language is relevant to our cognitive development, then it follows that we need to explore different grammatical profiles across cognitively diverse populations including the autism spectrum. In the remainder of this section, we will specifically explore how the grammar of Person is atypical in its use among many individuals on the autism spectrum and how this in turn may pattern with social-communicative challenges.

6.1. Non-standard self-reference

Early works in autism research document atypical language production, specifically the non-standard use of personal pronouns. As correctly interpreting first- and second-Person pronouns depends on the speech context, the standard interpretation suggests that such pronoun reversals are symptomatic of a core deficit in pragmatics or broadly-speaking 'context', rather than being due to any problem with pronouns in a narrow sense (e.g. Perovic, Modyanova and Wexler, 2012). Another interpretation attributes pronoun misuse to echolalia, such that the child repeats back the pronoun that she or he hears having been directed to them (e.g. Bartak and Rutter, 1974). The most

often referenced reversal types are I/you reversals, such that the self is referred to with the pronoun 'you'. For example, a child may request to her or his parent 'you want milk', using 'you' to refer to her/himself (Kanner, 1943). However, although commonly cited in the literature, other kinds of pronominal errors such as third-Person–first-Person reversals may be equally or more robust. Experimental data (which we will explore further below) and corpus data point to an overall shift from the first-Person pronouns to a third-Personal mode of self-reference. Dascalu (2014) analysed the corpora of two French-speaking boys with autism who show problems with pronouns in their spontaneous production. Although there were some you–I reversals, the most dominant pattern was the overuse of third-Person expressions in self-reference. In fact, for one child, the third-Person pronoun 'he' was used like a 'wildcard' to refer to nearly any referent and especially for himself. Could this misuse be due to difficulty managing context in a non-linguistic sense? The answer is open; however, if there are irregularities in production and comprehension that pattern with grammatical distinctions, we would be motivated to set such a pragmatic context aside. Through a review of the literature, we aim to tease out this question.

Mizuno and colleagues explored deictic shifting of pronouns and visual perspectives in adults on the autism spectrum whose non-verbal IQ were within norms. While pronoun reversals are prevalent in speech of children with autism, many grow out of pronominal difficulties by adulthood. However, although there may be no apparent difficulties, could persons with autism have a different underlying processing? Mizuno *et al.* (2011) targeted this question by testing self-reference comprehension and production via personal pronouns and proper names in an fMRI study. As noted earlier, this is not a distinction of self-reference *per se*, but rather how the person/self grammatically self-references him/herself. The task involved being shown a two-panel image with a picture of a 'house' and a 'carrot' centred in each panel. Then the two panels were folded back in such a way that only one image is visible to the participant, while the other remained visible to examiner. The questions required either the elicitation of pronouns (Q: 'who sees the carrot?', A: I do/me) or the name of the object and hence comprehension of the pronoun (Q: 'what do I see?', A: A house). In the name condition, the pronouns were replaced by the name of the participant and the name of the experimenter.

Interestingly, the authors found that accuracy and response time improved during the proper name condition in relation to the pronoun

condition. The imaging results showed a reduction in functional connectivity in comparison to controls for comprehension of questions in which the pronoun 'you' targeted the self's perspective, as in 'What can you see?'. The same was not found in targeting the visual perspective of another. This suggests that the difficulty is neither grounded in reference to the self nor understanding perspective, as the name condition was not problematic. Similarly, it is not merely a lexical problem with a mismatch of the concept of 'I' but rather a more systematic problem of the pronominal and referential system.¹⁷ Furthermore, this study suggests that deictic shifting is residually vulnerable even among persons with autism who no longer present overt pronominal reversals. Therefore we find the foundation of a pattern in the production and comprehension of self-reference — a directional shift of grammatical reference. The shift from first/second Person to names indicates a grammatical change, which can be outlined in the following three points. First, first- and second-Person pronouns lack both Gender and Number, while being specified for grammatical Person. Secondly, they are largely used referentially, in the absence of a lexical description. And thirdly they encompass the grammatical complexity of third- or non-Person descriptions (see Martin and Hinzen, 2014, for the evidence). In contrast to first- and second-Person pronouns, third- or non-Person definite descriptions have reference mediated by a lexical description. Similarly, proper names also have greater lexical weight than pronouns and third-Person pronouns are specified for Gender and Number and easily lend themselves to non-referential (e.g. anaphoric or quantificational) uses.

In sum, the ability to refer to the self is not impaired *per se*, however we find a facilitation of comprehension when personal pronouns are avoided and more third-Person forms of reference such as names are used. This suggests a shift in grammatical complexity affecting the referential system and grammatical Person in particular.

6.2. *Non-standard self-reference across modalities*

Similar to the findings of proper name facilitation in the Mizuno *et al.* study, photo identification tasks, which elicit first- and second-Person pronouns, further ground the phenomenon that we identify as a

¹⁷ As confirmed in a recent study that found autistic children to be at chance with respect to definite but not indefinite determiners (Modyanova, 2009).

grammatical Person shift. This experimental design has been conducted with English-speaking children on the autism spectrum, first by Jordan (1989) and later by Lee, Hobson and Chiat (1994), and documented a preference to refer to oneself by name rather than pronoun. Recently, this task was replicated with native signing children of American Sign Language on the autism spectrum whose non-verbal IQs were within norms in a study by Shields and Meier (2014). The task consisted of identifying photos which were either of the participant or the researcher, who they had been acquainted with previously. They found, similar to Lee and colleagues and Jordan, that children with autism have a preference to refer to themselves via their name sign or even finger spell their names rather than pronominally refer to themselves. This is particularly interesting in that it points to the robust linguistic nature of the phenomenon as it transcends language modalities. Furthermore, while the nature of pronouns may still be debated within sign language, it is generally accepted that the first Person is indicated by an index finger point to the chest. However, it appears that this sign, in spite of its iconicity, is avoided in autism in as much as it is a grammatical pronoun. Independent evidence by Hobson, García-Perez and Lee (2010) moreover shows that pointing isn't impaired *per se* in autism. Therefore, this study suggests that first-Person reference in so much as it is highly grammaticalized is weakened, while reference to self and other via proper names is spared.

6.3. *Patterning pronoun usage to grammatical distinctions across language diversity*

The majority of autism research to date has been conducted in English, and while we would not predict the specific language to affect grammatical abilities in autism, cross-linguistic variability may test whether language anomalies pattern with grammatical differences. One such instance is a study on syntax among Greek-speaking children on the autism spectrum by Terzi *et al.* (2014). The children in this study were on average 5 years old and had non-verbal IQ measures within norms. This study targeted a range of grammatical structures including clitic pronouns, which are not present in English. Clitics are pronouns that may attach to verbs rather than being lexically independent and therefore are even more stripped of lexical weight than pronouns in English. Given the preference towards proper names in elicitation tasks and production, it is interesting to further

explore whether strong lexical over grammatical weight facilitates comprehension in autism.

During a battery of comprehension tasks, only clitics appeared to be problematic for the children with autism, although their comprehension rate was still quite high (88.3%). However, the clitics that were used were third-person only and therefore less complex than first- or second-person clitics which are specified for +Person (Martin and Hinzen, 2014). Furthermore, during elicitation tasks, clitics seen in (46) were often omitted or substituted for a full determiner phrase, however substitutions did not reach significance in relation to their typically developing peers.

- (46) Ti filai
her.cl kisses
He kisses her

Moreover, although clitics were affected, other pronouns such as reflexives were found to be spared. This contrasted to the findings by Perovic, Modyanova and Wexler (2012) which in part motivated the study in Greek. However, there are two key differences between the two studies. First, the Perovic study was composed of a more heterogeneous group on the autism spectrum, with overall lower IQ, which may contribute to the lower performance; secondly, the grammar involved in reflexive pronouns differs between English and Greek. Greek reflexives act like full lexical noun phrases, in that they are preceded by a determiner and are followed by a possessive pronoun (47):

- (47) ton eafto tu
the self his
'himself'

Therefore, we find a trend: the higher the lexical weight, the less the pronoun is problematic. Clitics are most stripped of lexical content while English reflexive pronouns have some lexical quality (my + self) and Greek reflexive pronouns are full DPs. Therefore, although heterogeneity of group differences must certainly be taken into consideration, the contrast in performance by Greek- and English-speaking children with autism falls in line with grammatical distinctions.

6.4. Differences in episodic memory

In addition to tasks that specifically elicit pronominal reference, we may also explore self-reference in cognitive domains that may be dependent upon the first-person perspective, such as episodic memory. Episodic memory, the memory of past events, has been argued to be impaired among persons with autism. While autobiographical memory is intact, such as correctly recalling facts about one's life, individuals with autism may not necessarily recall the events on which the information is based (Lee and Hobson, 1998). Hare, Mellor and Azmi (2007) conducted an experiment in which persons with autism spent the day with researchers doing various activities and were later asked to freely recall what had happened. They found that, unlike in controls, persons with autism did not have any bias for free recall of self-experienced events over observed other-experienced events. This is not a problem of ipseity related to the self in a generic sense, since they did indeed remember events in which they participated. What differed from controls was that they did not show the typical distinction between a first-person and a third-person perspective in the remembered event. Furthermore, memory is indeed not an area of general difficulty, as many persons with autism manifest particular strengths in memory (Happé and Frith, 2009). Rather, when memory evokes the grammatical distinctions of Person, we find differences from peers without autism.

7. Summary

It is not in doubt that 'I' as used in philosophical debates on 'the first person' is intended to be what we have distinguished as the 'grammatical' notion of Person. What is in doubt is whether or not this grammatical notion captures a non-grammatical and independently given distinction. The above evidence from essential indexicality and from language in autism does not suggest that non-grammatical substitutes are available that capture the required distinctions. The meaning of 'I' cannot, we suggest, be explicated in any terms not invoking grammatical distinctions. It is a linguistic and more narrowly grammatical term essentially. Whatever forms of selfhood and self-reference it goes with, therefore, are essentially linguistic. Language is not a contingent extra or mere 'tool' in which independently given forms of selfhood are merely 'expressed'. Nor does there pre-theoretically seem to be any implausibility in the view that grammar, the uncontroversial and essential organizational principle distinctive

of human language, allows for forms of self-reference that do not exist in the absence of language. Renewed attention to the cognitive function of grammar in this way promises new insights on language, metaphysics, and cognitive diversity alike.

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