

De se or not *de se*: A question of grammar

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ABSTRACT: Self-reference said to be ‘*de se*’ is often explicated by reference to the grammatical first Person (1P), but the nature or necessity of this link are unclear and have not been investigated systematically from a linguistic point of view. We argue that 1P in a referential and unbound position in a matrix clause, or as occurring in an embedded clause with grammatical agreement to the matrix 1P, provides necessary and sufficient grammatical conditions for a speaker to express a thought *de se*. Insofar as analytical concepts involved in these conditions are not themselves grounded in any known independent semantic or psychological principles, this suggests a potential foundational role of grammar for the phenomenon in question. Convergent evidence for this conclusion comes from two universal generalizations about personal pronouns, the Associative and Suppletive Plural generalizations. These, we argue, follow from the grammar of Person directly, have no semantic explanations, and do not support a semantic account of the *de se*. As a final piece of evidence, we point out that pathological forms of self-reference in mental disorders centrally involve distinctive anomalies relating to personal pronoun use – thus again suggesting a foundationally important connection between grammar and human-specific aspects of self-referential thought. We conclude that while reference *de se* has been largely conceptualized as a semantic or psychological phenomenon, it reflects an inherently linguistic form of thought, which is mediated grammatically.

Keywords: *de se*, essential indexicality, Person, self, obligatory control, mental disorders

1 Introduction

Self-reference is a very broad category: It can be carried out in many different ways, such as raising one’s hand, pointing with the index finger to oneself, saying ‘the speaker’ (meaning oneself), muttering ‘You idiot!’ (meaning oneself), or saying ‘I’ as in ‘I am an idiot’. Even within language-mediated forms of self-reference, we can distinguish self-reference in the first, second, or third grammatical persons (henceforth 1P, 2P, 3P) as just illustrated.¹ While all of these forms of self-reference involve a notion of self, they crucially also differ. In particular, a speaker may think *This man looks really old*, when in fact he happens to refer to himself in a mirror, with or without realizing this. *I look old* does not allow for this latter possibility, entailing a reading where self-reference is said to be *de se*.

Thought *de se* is commonly defined in philosophy as thought ‘when one thinks of oneself in the first-person way’ (e.g. Ninan 2010). This ‘first Person way’ has played a crucial role throughout modern philosophy more broadly.² Thus, René Descartes, when putting forward his famous *Cogito, ergo sum* argument, could not possibly have put

¹ Technically we will follow the approach that so-called 3P is either ‘non-person’ (i.e. defined as neither 1P nor 2P), or ‘person’ in a different sense from 1P or 2P, for example in not referring to a speech act participant (Benveniste 1966; Sigurðsson 2004, inter alia; see Nevins 2007, Sigurðsson 2017 for discussion).

² As has, to a lesser extent, 2P (Buber 1996; Darwall 2006).

it in the form *Cogitat, ergo est* (He thinks, therefore he is), no matter who the third person in *Cogitat* would have referred to (including God or Descartes himself). Ever since then, major paradigms in philosophy of mind have centrally invoked 1P forms of reference to oneself,³ including in key philosophical issues such as self-consciousness and the rationalization of action (Prosser & Recanati 2012; García-Carpintero & Torre 2016).

We will take it for granted in what follows that the notion of ‘first Person’ featuring in these philosophical paradigms *is* indeed the technical grammatical notion of 1P, rather than reflecting the non-technical, literal compositional meaning of this phrase, or some other cognitive, non-linguistic notion. Person in the grammatical sense relates to a universal category of human grammar, manifest in English through marking of all referential noun phrases for one of three grammatical Persons.⁴ Person in this sense has nothing to do with the semantic concept of a person or with referring to a person, as shown by the fact that any person can be referred to in any grammatical Person (illustrated above). Grammatical Person enters grammatical Agreement patterns and interacts with core grammatical principles such as Case,⁵ leaving no room for doubt that they are indeed a crucial aspect of human grammar.

Our aim here is to contribute to clarity on how exactly this grammatical notion and the philosophical and semantic concept of thought *de se* relate to each other. One theoretical possibility is that there is the above thinking ‘in the first-person way’, but this thinking has nothing to do with grammar: 1P as featuring in characterizations of this phenomenon is not constitutive for that thinking itself, but only a contingent aspect of its external verbalization for purposes of communication. An immediate question for this proposal, on the other hand, is how to characterize the notion of ‘thinking in the first-person way’ in question, without helping oneself to the notion of 1P. It might be tempting to suppose that such thinking could be captured simply as thinking of oneself with ‘awareness’, say, or of ‘oneself as oneself’. Yet it is unclear how to conclusively characterize the forms of awareness or knowledge needed, without bringing in the notion of 1P (as in: *I am the person I see in the mirror*). As long as 3P forms of self-reference are involved, cases of mis-identification will likely always remain possible, as reviewed below; pathological forms of self-reference as reviewed in §5, too, will

³ See e.g. Chalmers (1996:17): ‘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’; Shoemaker (1994:7): ‘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 (...)’ Maier (2011:294): ‘De se beliefs (...) are beliefs about oneself as oneself, i.e. beliefs that the *ascriber* himself would express in the first person.’

⁴ We will from now on capitalize this notion of Person, along with other technical grammatical notions such as Agreement, to make clear that not the common nouns are intended.

⁵ See, in particular, the ‘Person Case Constraint’ (Nevins 2007; Adger & Harbour 2007), the relevance of Person to ‘Split Ergativity’ patterns (Kroeger 2005), or the differences in grammatical and morphological complexity in personal vs. non-personal pronouns in Romance and beyond (Déchaine & Wiltschko 2002; Martin & Hinzen 2014).

illustrate forms of relating to oneself with ‘awareness’ or knowledge of oneself as oneself, which still do not amount to canonical forms of self-reference in 1P. In light of these difficulties, we will explore an alternative proposal here, namely that 1P is intrinsic not merely to the *verbalization* of thought *de se*, but to that form of thought itself.⁶

This proposal implies that the type of thought in question is itself linguistic in its representational format. Note that what is at issue here is not the relation of thought *de se* to the 1P *pronoun*, but to an abstract universal grammatical *category*. This category can be *lexicalized* in English by means of pronouns, but it is equally manifest in patterns of verbal Agreement without a lexically independent pronoun or noun phrase (e.g. Spanish *Pienso*, meaning ‘I think’), or without either (see e.g. Sigurðsson 2011 on Swedish). Note further that, if the grammatical category of Person were to be involved in a thought, this would not need to have anything to do with persons *talking* (to themselves or others) when engaged in thought about themselves. The *pronunciation* of a linguistic object is the externalization, in speech (sound waves) or another physical channel, of an internally configured mental representation, which can have the linguistic format and structure it has, even when it is not pronounced. Language is not the same as speech, and our claims are not about what people pronounce, whether in external or ‘internal’ speech.

An initial argument for assuming that the category 1P must be involved in thought *de se* starts from the fact that, in order for a thought like *I am the winner* to be the exact thought it is, it needs to be generated by some engine (in the mind/brain) that can produce this particular thought, along with a potential infinity of others. But beyond that, such a thought also needs to have the specific structure it does, since the intensionality (with an ‘s’) of thought implies that any change in this structure would imply a change in the identity of the thought itself (Hinzen 2017). *This guy is the winner*, for example, or *I am a winner*, are not the same thought, even if they are uttered by the same speaker to himself in front of a mirror. So, the grammatical categories involved in a sentence expressing a thought are either intrinsic to the thought, or if they are not, there will need to be non-grammatical structuring principles and categories in the thought, which are directly *matched* to the grammatical ones. We take those non-grammatical principles and categories to be unknown, and it should therefore count as a reasonable null hypothesis that generating the ‘thought’ and generating the linguistic mental representation underlying a possible pronunciation of it as a sentence, could indeed be the same process (Hinzen & Sheehan 2015; Hinzen 2017). Thinking in the ‘first-person way’, in short, could simply be what it seems to be: thinking in 1P, which is therefore linguistic in nature.

⁶ Thought *de se* plays crucial roles in discussions of action explanation in philosophy (García-Carpintero & Torre 2016). Note that the question raised here is orthogonal to this research program, since it is about the mental representation involved in the form of thought in question, whichever role that form plays in the rationalization of action.

There is a second initial reason for pursuing this null hypothesis. It is one of the basic textbook points in linguistics (e.g. Kroeger 2005) that standard notions of grammatical theory are not translatable or reducible to non-grammatical – e.g. semantic or psychological – ones. Even something as basic as lexical categories (N vs. V) are now widely recognised not to be explicable in non-grammatical (such as semantic) terms. The same applies to a category like grammatical Gender, where textbooks will typically explain that Gender, as a grammatical category, has nothing to do with biological (or social) gender (Picallo 2008). The same point applies to the grammatical notion of argument structure, which, while partially determined by the lexical meaning of a verb, is not ultimately reducible to verb semantics (Hale & Keyser 2002; Bowers 2010); or to structural Case, which is equally widely accepted not to be explicable in non-linguistic semantic or conceptual terms (Pesetsky & Torrego 2001). Based on this, it would be surprising indeed if a core category of grammar such as Person *would* be reducible to a semantic principle or explicable in non-grammatical terms. We would rather expect that Person has no more to do with referring to entities that are ontologically or semantically persons, than feminine Gender needs to relate to being a woman. As already noted, entities in the world that are persons can be referenced in any grammatical Person, rather than merely the forms that are grammatically ‘personal’, i.e. 1P or 2P. If a notion like, say, ‘awareness’ would explicate the distinction between personal and non-personal forms of self-reference, this would be a very surprising finding, contravening the robust generalization that grammatical notions are not scientifically reducible to non-grammatical ones.⁷

This leaves another argument to be moved out of the way before starting in full, namely that thought *de se* is available in at least some animals, and hence cannot depend on language. In this respect, we note that the notion of *de se* is highly specific and that the varieties of self-reference and awareness in linguistic and non-linguistic species also in part differ. This allows room for the possibility that one particular human-specific such form *could* be linked to our language capacity. It could also be argued that thought in humans takes place in a postulated ‘Language of Thought’ (LOT) distinct from language itself (Fodor 1975). However, whatever LOT would turn out to be empirically, it would in the human case have to contain, by the above intentionality argument, categories identical or equivalent to the grammatical ones that correspond to the exact identity of a given thought. Yet, what 1P in particular might be in the LOT, if it is not simply 1P, is entirely obscure. Moreover, as long as an appropriate distinction is made between language and speech, a distinction between LOT and ‘language’ is difficult to make; and that between ‘thought’ and ‘language’ becomes problematic in the human case, as long as thought is not understood in a

⁷ Recently, Hinzen & Wiltschko (2018) provided evidence that this line of reasoning holds for the notion of truth as well, in which case the authors claim a foundational role for grammar as well.

broad or generic but human-specific sense, distinct as such from imagery, emotion, music, artistic thought, or some generic form of inferencing.⁸

In the specific case of referential thought, of which thought *de se* is a subspecies, this problem becomes particularly pronounced. Although reference as such is neither human-specific nor dependent on language, the closest non-linguistic analogue to linguistic (declarative) reference, namely index-finger pointing, is closely linked to language in both neurotypical (Iverson & Goldin-Meadow 2005; Colonnese et al. 2010) and atypical (Maljaars et al. 2011; Slušná et al. 2018) human development, it is fully linguistic in sign languages (cf. Cormier et al. 2013 for discussion); and it is essentially absent in non-linguistic species including non-human primates (Tomasello 2006; Tempelmann et al. 2013; Tomasello & Call 2018) and monkeys (Cheney & Seyfarth 1990). Since reference *de se* is a species of self-reference and self-reference is a species of reference, it would again be highly surprising if reference *de se* was available to any such species (which, again, would clearly not rule out various other forms of self-awareness). It is noteworthy, too, that nonverbal symbolic gestures and spoken language are processed by a common neural system (Xu et al. 2009), suggesting that it may be meaningless, at least at this neural level, to relate the form of thought expressed in the former, but not the latter, to language.

In summary, there are initial reasons for taking the above null hypothesis seriously. We will now explore this idea in-depth, by building an argument based on convergent evidence from several domains. In §2, we will scrutinize a comprehensive range of standard cases of reference *de se* from the literature, in order to determine which grammatical patterns, if any, they reveal. A single grammatical pattern manifested by them all (instead of arbitrary ones, or a wide range), would in itself provide evidence in favour of the above hypothesis. In §3, we point out that the grammatical pattern can be identified and has no known reductive explanations in non-grammatical terms. We then argue (§4) that the same is true of two universal linguistic generalizations related to the semantics and morphology of personal pronouns, which turn out to align with their grammatical properties, but no independent semantic or psychological principles. They do not, we conclude, support a semantic account of the *de se* as previously claimed in Wechsler (2010). Finally, in §5 we present evidence from disorders of self-referential thought and selfhood, in the form of findings that these distinctively involve mis-use of grammatical Person distinctions. This further supports a connection between grammar and the forms of thought in question. We conclude from these three sources of evidence that grammar has foundational significance for thought *de se* and thus philosophy. It is worth stressing that our proposal is put forward with

⁸ None of the latter are our focus here, though we consider their relation to the grammatical form of thought we describe to be crucial. For discussion see Roeper (2009), Hinzen & Sheehan (2015). Some recent accounts (Fedorenko & Varley 2016) point to the partial independence of musical or mathematical thought from language and hence a form of modularity, but both arithmetic and music do not involve referentiality in the same way as thought expressed in language does. Moreover, evidence from aphasia as invoked by these authors cannot illuminate the foundational role of language in child development.

clear conditions of falsification: *de se* interpretations necessarily entailed by grammatical configurations other than the ones we will specify, or none, would amount to a refutation of the present proposal.

2 Thought *de se* revisited: a typology of cases

In this section we review classical cases used to exemplify reference *de se* with a view to identifying their grammatical aspects.

2.1 Simple matrix clauses featuring 1P

Classical ‘mirror’ cases of reference *de se* exhibit the grammatical complexity of matrix clauses containing 1P. Thus, David Kaplan may see a person in a mirror and find to his amusement (Kaplan 1989: 533):

- (1) That guy’s pants are on fire.

But then it may turn out that the person in question is Kaplan himself (henceforth, we will call this the ‘semantic referent’). The moment Kaplan realizes this, the epiphany ensuing gives rise to a different form of self-reference, which is said to be *de se*:

- (2) My pants are on fire.
 (3) That guy is me.

Semantically speaking, in (1) the property ‘ $\lambda x. x$ ’s pants are on fire’ is applied to the exact same individual as in (2), i.e. Kaplan: the semantic referent is identical. The grammatical shift from 3P self-reference to 1P reference to this individual is a natural grammatical index for the cognitive shift that occurs, as and when the epiphany happens. The same is true in the classical non-mirror case of the predicament of the hypothetical amnesiac Rudolf Lingens (Perry 1993: 492), who is lost in the Stanford library and does not know who he is. Reading through biographies of himself, he learns (4) but not (5):

- (4) Lingens is at Stanford.
 (5) I am at Stanford.

(4) again inadvertently involves self-reference, but in these circumstances, it is of course again only *de re*. (5) also involves self-reference, but when asserted (with normal prosody), it is necessarily *de se*. Again, self-reference is 3P in (4) and 1P in (5). (4) contains a subject NP that involves descriptive information – in semantic terms, the predicate ‘ $\lambda x. x$ is called Lingens’ – while (5) does not: there is no predicate in this

case, as ‘I’ is not a name, and it occurs in the same grammatically referential position (i.e., Subject).

The predicament, then, is that the speaker in (4), as self-referring in 3P, does not recognize that the specific (minimal) description involved applies to him. Note that here, just as in the mirror cases, the exact same predicament could obtain if Lingens (or Kaplan) were identified descriptively as the ‘agent of the context’ or the ‘speaker’: any such descriptive identification would always allow for a further question: ‘Am *I* the agent/speaker?’⁹ The non-grammatical notions of ‘Agent/speaker of the context’ are thus in principle and crucially the wrong notions to invoke in characterizing the meaning of the 1P or reference *de se*. As long as self-reference is mediated by a description, the description could always fail to transparently apply to the referent, creating the *de re* type cases of inadvertent self-reference above.

What, though, if (4) is uttered in a context where Lingens knows he is called ‘Lingens’? Self-referring in 3P in this way would be rather unusual and could be a sign of pathology if happening systematically (see further §5). In mentally healthy people, it would standardly happen only in what Collins & Postal (2012) refer to as imposters, e.g. *Your daddy wants you to sleep now*. In line with this case being the exception to a rule, Collins & Postal argue on empirical grounds that, in fact, 1P *is* involved in these cases. This is e.g. suggested by the possible 1P agreement pattern in examples like *Your daddy remembers our agreement*.

Summarizing, classical mirror and amnesia cases so far suggest that an essential feature of reference *de se* is 1P. We now hypothesize more specifically that the configuration of 1P as occurring in a grammatically referential (rather than predicative) and unbound position, within a matrix clause, is sufficient for a thought *de se* to be unambiguously expressed by the speaker.¹⁰ We will sharpen this hypothesis as we proceed. Note that, as this formulation makes clear, 1P *per se* is not the key – the *grammatical configuration* is, in which it occurs. Having claimed sufficiency, we scrutinize the necessity of this configuration next.

2.2 3P attributions of thoughts *de se* using finite embedded clauses

Consider John, who is slightly intoxicated and sits in his chair watching a documentary on TV providing conclusive evidence about a case of treason in the last war. He completely agrees with the evidence presented. Ironically, this person is himself, though he fails to realize that, whether because of his intoxication or because the TV image is

⁹ This could e.g. arise where Lingens speaks, but due to the extraordinary acoustics of the Stanford library, it is not clear to him whether the sounds he hears are spoken by himself. The same occurs in psychopathological conditions where patients are aware of thought or speech taking place, but not of who the thinker or speaker is, in first-personal terms. See further §5.

¹⁰ These configurational properties are violated when 1P occurs in embedded quotational contexts, e.g. *She said to him ‘I love you’*, which expresses a thought *de se* (of the grammatical subject), not the speaker’s. 1P in predicative contexts (e.g. *Everyone has an I*), or bound by a quantifier (e.g. 1P in the scope of *only* as in *Only I got a question that I understood*) loses its *de se* qualities.

slightly blurred. In this circumstance, watching this scene I could utter (6):

(6) John thinks that he is a traitor!

It is obvious that, in *no* context, (6) expresses a *de se* thought on the part of the speaker – since it is about another person. The issue can thus only be whether it *attributes* such a thought to another person, which Sigurðsson (2017) captures terminologically as ‘secondary *de se*’. But we see from this example that it *need* not provide such an attribution: I could utter (6) with full awareness that John does not recognize the identity, and hence intend a *de re* reading. Focal stress on *he* or using it deictically accompanied by index-finger pointing to the guy on TV virtually *forces* this reading. One might think that adding *himself* after (6) would disambiguate (e.g. Devitt 2013), but it crucially does not. If we are both watching John, and you utter (6), and I think that John supposes the guy on TV to be Bill, I could comment, *Yes, John thinks that Bill is a traitor*. But you correct me, saying: *No, John thinks that he himself is a traitor!*, and we both laugh. In this example, *himself* disambiguates the semantic reference; it does not provide the relevant first-person perspective.

If, on the other hand, a thought *de se* is attributed in (6), what is attributed to John is the thought *I am a traitor*, not *He is a traitor*, which would erase the *de se* immediately again. Importantly, while English has no option of enforcing a secondary *de se* reading in embedded positions other than quotational contexts, other languages do. Crucially for our position, 1P *is* manifest morphologically in these instances, in the absence of quotation, which in English forces a secondary *de se* reading as well (e.g. *John thought: ‘I am a traitor’*). For example, in Persian (from Sigurðsson 2017), we see a morphological 1P in an embedded NP bound by a matrix NP, when a *de se* attribution, by contrast to (6), is grammatically obligatory (ignoring the irrelevant reading where 1P refers to the speaker, i.e. there is no semantic co-reference between matrix and embedded subject to begin with, and there is no option of a *de re* vs. *de se* dichotomy that exists in (6)):

(7) [Amir speaks:] Ali be Sara goft [ke man tora doost daram]
 Ali to Sara said [that I you friend have.1SG]
Either: ‘Ali told Sara that he [=Ali] likes her.’
Or: ‘Ali told Sara that I [=the speaker] likes you [Sara].’

It is remarkable, therefore, that where a *de se* reading is enforced, 1P morphology shows up in the embedded position. Sundaresan (2011), using evidence from Tamil, similarly shows that obligatory *de se* readings with 3P matrix subjects arise in this language only when Agreement morphology on the verb in the embedded clause is 1P (see also Park 2018, on Korean).

In sum, the evidence above suggests that thoughts attributed in 3P *can* trigger

attributions of *de se* thoughts, but only where these attributions are grammatically encoded through 1P in the embedded clause and there is a grammatical dependency between it and the matrix subject, such readings are enforced. Next, we consider embedded clauses with non-finite Tense.

2.3 Non-finite embedded clauses with Obligatory Control

The conclusion just reached is flatly contradicted by the widespread claim that so-called ‘obligatory control’ (OC) enforces a *de se* reading, irrespective of 1P (Chierchia 1989; Percus & Sauerland 2003; Higginbotham 2003; Schlenker 2003; Anand 2006; Stephenson 2010; Ninan 2010; Hornstein & Pietroski 2010). So unanimous has this consensus been, that Landau (2015) refers to it as ‘the holy grail’, i.e. that in attitude contexts, ‘PRO must be construed *de se*’. This classical claim is illustrated by (8), where the overt embedded subject seen in (6) is replaced by a non-overt PRO co-referential with the matrix subject:

(8) [me:] John hoped PRO to win the medal.

Our first observation in relation to (8) is the same we made in relation to (6): Not only does (8) trivially not express any *de se* thought (on the part of the speaker), but if it is intended to depict a situation in which John thinks *de se* that he will win the medal, then the speaker also attributes the thought *I will win the medal* to John. But crucially, (8) *need* not attribute a *de se* thought in this sense. The speaker could utter (8) inferring its truth from context, without the exact thought *He/I will win a medal* having even occurred to John. All that John did over the last months or years might have indicated to the speaker that he had the relevant hopes and intentions.¹¹ In a mistaken identity case, John might have claimed that of all the potential candidates seen on TV, only one, ironically himself, would win the medal. As Pearson & Roeper (2018) note, this intended *de re* reading could be brought out by an operator such as *Without realizing this...* or *Unwittingly...*, prefixed to (8). Cappelen & Dever (2013:163) offer the example of a pub scene, where John, who is running for mayor in his local town, is too drunk to recognize himself giving a campaign speech on the TV screens, which we find disastrous but he finds exhilarating and full of promise. I turn to you and say:

(9) Can you believe this? John’s so drunk he actually expects to win the election.

Again, this is clearly intended as *de re*, a reading that the embedding under the scope of ‘actually’ makes easier to retrieve. Strikingly, John expects of himself to win the

¹¹ See similarly Jaszczolt (2013), Cappelen & Dever (2013:162). Magidor (2014:47) argues for the same point, though mistakenly using a passive construction that does not involve a PRO pronoun.

election, though one would absolutely not have expected this based on his disastrous performance.

A theoretical argument for the same conclusion is syntactic. The embedded subject in (8) is either PRO, as indicated above, or else a copy of ‘John’, as indicated in (10) (Landau 2013; Hornstein & Pietroski 2010):

(10) [John expects [_SJohn to get a medal]]

But there is nothing in either syntactic analysis that even suggests a *de se* reading. That ‘John’ in the embedded position is a copy may predict a *co-referential* reading (identity of the semantic referent), but it is not clear why it would predict a *de se* reading. It is not clear why the analysis of the embedded subject as a PRO controlled by ‘John’ should entail a different conclusion, i.e. engender anything beyond identity of reference and (3P) Person Agreement across the two subject positions. OC is about controlling the reference, not the *de se*, as also seen from the fact that OC can happen in inanimate contexts such as *This key_i will serve/do [PRO_i to open the door]* (Landau 2013: 34). With an attitudinal lexical predicate, the situation changes, but not, by the above evidence, so as to enforce *de se* readings.¹²

In stark contrast to the OC examples above, there is no optional *de re* reading when control is accompanied by 1P Agreement across a clause boundary (involving a matrix clause):

(11) I expect PRO to win a medal.

(12) John expects me PRO to win a medal.

Unlike in the 3P cases in (6) and (8), there is no context in which (11)-(12) could be uttered with a *de re* reading. The fact that *de re* readings are not enforced in (6) and (8) suggests that OC, irrespective of Person, is neither necessary nor sufficient for a *de se* attribution. There is no Holy Grail.

2.4 1P thought attributions using finite embedded clauses

We have now argued that evidence from 3P OC against the *necessity* of 1P (in the right configuration) for *de se* interpretations should be questioned: OC in 3P does *not* enforce an attribution *de se*. New issues for our sufficiency claim, on the other hand, arise when turning to 1P in embedded clauses that, unlike in (11), repeated below as (13), are finite and hence have an overt subject, as in (14):

(13) [John:] I expect PRO to win a medal.

¹² This happens to different degrees with different lexical verbs. As Pearson & Roeper (2018) note, *Mary claimed to be a great cook* is possible when she does not realize she is in fact the cook in question, but *Mary boasted to be a great cook* is less felicitous.

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

As long as the matrix and embedded subjects agree in 1P, as in (14), a *de re* construal still does not become optional, confirming necessity and sufficiency of 1P with Agreement across the clausal boundary for a *de se* thought to be expressed. But let us now manipulate Tense one more time and put the matrix verb and the modal in the embedded clause into the Past:

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

Now John could utter (15) in a circumstance where he is recalling a past episode of his earlier self seeing the guy on screen without realizing it was himself. The intended reading here comes out clearer by embedding (15) under the adverbial *in fact* and adding contrastive stress on the second *I*, which denotes his former self (the one up for winning the medal at the time):

(16) [John:] I in fact expected that *I* would get a medal [though I didn't realize that].

On this reading, the speaker implies that his former self (the 'guy on screen') did not think *de se* that it/he would get a medal. Is this a *de re* reading, demonstrating that despite 1P in both the matrix and embedded subject position, *de se* ceases to be enforced? No, because the intended referential obviation between the speaker's actual and his former self has, by the time of the speech act, actually disappeared: his broken relationship to himself at the earlier time has (over time) become fully transparent. John can utter (16) with the intended meaning only *after* the epiphany has occurred, i.e. *post hoc*. Put differently, while there is a 'person-split', both selves (the former and the actual) are still transparently bound to the speaker's current self, as denoted by the matrix subject 1P.

It is quite expected, moreover, that the grammatical factors involved, specifically temporal displacement as expressed by past Tense morphology in both the matrix and embedded clauses, would have this obviative effect. This is because the displacement naturally allows a certain amount of 'self-distance' between the past and present 1P selves, which are involved in different events, and hence the possibility of a referential obviation or person-split. Put differently, in virtue of having its own finite Tense, unlike in the OC case, the embedded clause can depict an event that is temporally more independent with respect to the event denoted by the matrix verb. Moreover, since the clause has its own overt subject, there are now two overt lexical NPs in paradigmatically referential positions (Subject), which implies the second can also have more referential independence than PRO can in OC.¹³

¹³ It is interesting in this regard to recall the obviation effect in Romance languages (Ruwet 1984), by which the subject of a subjunctive clause must bear an *obligatorily* disjoint reference with respect to the matrix subject: subjunctives in Spanish do seem to preclude a *de se* reading.

In sum, the slight deviation seen in (16) from the *de se* interpretation expected from a shared 1P feature across matrix and embedded subjects is not only questionable (a true *de re* is not achieved), but also rationalizable based on the grammatical factors involved in addition to 1P and embedding (i.e. Past tense, finite embedded clause, overt embedded subject, subjunctive mood). Note once again that, in English, with no shared 1P across the clause boundary, as in (17)-(18), nothing even begins to trigger anything other than an obviative reading:

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

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

The example in (16) is therefore not a convincing argument either against the sufficiency claim we made regarding reference *de se* being based on an embedded 1P agreeing with an unembedded and unbound 1P. It is plain, however, that other grammatical factors can interact with the predicted *de se* reading in this configuration, in ways that allow a 1P self to transparently distinguish different versions of itself over time.

2.5 Raising constructions

Consider now the raising verb ‘seem’, with and without a finite clausal complement, which will allow us refine our grammatical analysis further:

(19) It seems that I am depressed.

(20) I seem to be depressed.

(19), which has 1P in the embedded but not the matrix clause, lends itself more easily to an ‘objective’ reading exhibiting some referential obviation, than in (20), where it has ‘raised’ to the matrix subject position: (19) could be uttered by me when I am looking at clinical data such as a brain scan clearly suggesting a state of clinical depression. This reading approximates one where the statement is effectively about ‘whoever the guy is’ whose data are being contemplated, compromising a strict *de se* reading (though the speaker still identifies with this other self). (20) lends itself to such an objectifying reading less easily: the person uttering (20) is more likely in a state of being confronted with the depression itself experientially, as and when she speaks. A related case is (21)-(22), discussed by Den Dikken (2008):

(21) Someone seems to be sick.

(22) Someone seems sick.

Den Dikken argues that only in (22) the existential subject can reconstruct (i.e. have narrow scope) under the raising verb, while in (21), the existential must have wide

scope over ‘seems’. A clearer case may be:

(23) The janitor seems to be sick

(24) The janitor seems sick.

In (24) the speaker seems to be in the presence of the actual janitor (referential reading), while in (23) he could make an inference about whoever the janitor is, on the face of indirect evidence, like for instance a lot of tissues in the trash in the janitor’s office. These data are in line with our generalizations so far, since 1P in (19) does not occur in a matrix position. Moreover, as noted, the intended meaning of (19) is still such that the speaker identifies himself with the subject of the depression: the case is not a true *de re*. The difference with (20) is naturally explained by the raising involved:

(25) seem [I to be depressed]

(26) I seem [__ to be depressed]

Raising means that the two subjects are the exact same item, inserted into the derivation from the lexicon only once and identical across the two positions. Referential obviation is therefore less expected than in (19), where there are lexically different subjects. In Den Dikken’s examples (21)-(22), in turn, the clausal predicate is adjectival only in (22) but expanded and verbal in (21), which plausibly allows for the reconstruction effect in the embedded subject position and would explain why in the 1P analogue of (21)-(22), i.e. *I seem sick* vs. *I seem to be sick*, a similar difference obtains in how exactly the speaker’s thought of being sick is configured. In fact, if we look at (27)-(29), a progression is seen, which aligns with the grammatical differences involved:

(27) I am sick.

(28) I seem sick.

(29) I seem to be sick.

Of these, none could be fully *de re*, any more than (15) can be. The raising structure in (28) with the non-expanded adjectival predicate *sick* is still as close as we can get to the *de se* thought expressed in (27) while adding a lexical (verbal) predicate, and it still effectively has none of the obviative readings. With the more expanded bi-clausal predicative structure *to be sick* in (29), on the other hand, the matrix subject can reconstruct in the embedded preverbal position and a door opens to a slight degree of referential obviation in the form of the different reading above, where you contemplate your own sickness, as it were, based on objective evidence or an external version of yourself.

Another example for a reading implying some self-distancing of the speaker in 1P

is (30), below. Suppose you are watching a TV documentary and thinking that the guy seen (dressed in full uniform etc.) is a war hero, and then somebody tells you the guy is in fact you, although you can't for the life of you see it's you. Eventually you could say, shrugging your shoulders:

(30) Well, apparently, I believe that I am a war hero.

This statement, with embedding under the epistemic modifier 'apparently', is felicitous, but without the modifier, it would be very odd in these circumstances and arguably false. Even with the modifier, the reading still cannot be fully *de re*, and the speaker is self-identifying with the different selves involved, binding them to the 1P of the matrix subject.

In summary, the data of this subsection show that with 1P Agreement across a matrix and embedded position, classical *de re* scenarios remain impossible, though clearly identifiable grammatical factors such as raising vs. control, the nature of the clausal predicates involved, and embedding under epistemic operators, can influence the exact nature and degree of the *de se* readings derived, in systematic and rationalizable ways.

2.6 Summary

The overall generalization emerging from this section is that the configuration of 1P in a referential and unbound position in a matrix clause, with or without 1P in an embedded clause agreeing with or bound by the matrix 1P, are sufficient for *de se* readings, and that 1P is necessary in all cases. Thought *de se*, as expressed in language, is *grammatically configurational* in this sense: if it is necessarily encoded, with no context allowing for deviations from *de se* readings, then this is uniquely predicted by the grammatical configuration in question. Specific grammatical factors, including finiteness, tense, mood, raising vs. control, and embedding under epistemic operators, interact with *de se* readings in systematic and rationalizable ways, without compromising this essential generalization.

3 Discussion

The above generalization is a *grammatical* one in the sense that it is stated over grammatical primitives and conditions and invokes no semantic, pragmatic, or psychological terms. Furthermore, it does not appear that where the grammar rules *out* a *de se* reading, another non-grammatical system (e.g. pragmatics, or communicative intentions) can rule them *in*. For example, a speaker can certainly *intend* a 'secondary *de se*' reading in a 3P attribution in English, but as we have noted, in no such case does this lead to such a reading being either grammatically encoded or obligatory. That

suggests that grammar not only determines whether a thought is *de se* or not, but it cannot be overruled; and that pending scientific or ontological reduction of grammatical notions to non-grammatical ones, *de se* readings may arise *from* the formal structure of grammar.

This can be illustrated for the notion of 1P itself. In particular, it is wrong to define 1P in terms of a semantic word-thing relation: If any person can be referred to in any grammatical Person, no semantic relation to a given person can capture what is distinctive to 1P reference to it. Other attempts to define what *I* means and what makes it distinctive, without invoking this grammatical notion itself, quickly falter: Saying it involves ‘first-person thought’ is immediately circular; saying it involves ‘self-reference’ is plainly insufficient, as noted. It would also be wrongheaded to seek a translation of *I* into anything like ‘the person speaking’, ‘the speaker but not hearer’, ‘the subject’, ‘the conscious self’, ‘the personal mental file’, ‘the agent of the context’, etc., all of which are 3P expressions that could be used by me in circumstances where it is not clear to me whether the person referred to under these 3P forms is *me*, as identified in 1P (e.g. Lingens cases discussed in §§2.1).¹⁴

Such attempts at a definition prove to be even more wrong-headed when we realize that 1P morphology does not have the interpretation relevant to a discussion of *de se* intrinsically, but only when functioning grammatically in a particular way, i.e. being part of the right configuration. Thus, when functioning as a predicate, as e.g. in *In a state of clinical depression, there is no I*, 1P is morphologically present but denotes a generalized notion of selfhood, not what it denotes in the configuration *I am depressed*. If the relevant notion of 1P intended to be explicated in non-grammatical terms itself turns out to be grammatically derived, this is a further argument against its explicability in non-grammatical terms.

If the semantic word-thing relation does not illuminate the difference that 1P makes in referring to a person, Kaplanian ‘characters’ or Fregean ‘senses’ will not do so either. Specifically, the character of *I* would be a function mapping a context to an individual concept (Kaplan 1989: 84). But there is no known individual concept that illuminates what *I* means, and none does ever seem to have been stated except for commonly read informal rules like that ‘*I* refers to the speaker/agent of the context’. An individual concept with this content would be cognitively useless, though, since it matters, as we have seen, how the relevant person in the context is grammatically *referred* to. The point is not to know who *the speaker* is, but whether ‘the speaker’ is *me*. Since the description ‘the speaker’, even when I am speaking, can refer to any speaker, while *I* can only refer to me, the notions ‘the speaker’ or ‘the agent’ does not illuminate the meaning of *I*. What a speaker must know, therefore, is not the above rule, but when a 1P form of reference instantiates a given 3P description.

¹⁴ Harbour (2016: 41) argues that there would be a SPEAKER feature (AUTHOR, SIGNER, etc.) represented by a semantic primitive *i*, just like there would be a HEARER feature (LISTENER, AUDIENCE, etc.) represented by a semantic primitive *u*. Yet could we explicate *i* in psychological, semantic, or ontological terms, without referencing 1P?

This argument is general, since *any* hypothetical character or sense, in order to be informative, would have to capture *some* descriptive information specifying the rule or mode of presentation it corresponds to – it could not simply amount to restating that the relevant reference is to be in 1P. But the key to *I* is that its reference is *not* mediated by any descriptive information, as stated in 3P terms. We can describe, identify and point to trees, cars, or people, but if and when I self-refer using *I*, I do not describe, identify, point to, or interact with the referent of this pronoun in the same way as with any objects identified in 3P. I do not invoke any properties of it at all. Thus, in the utterance *I am tall*, the speaker attributes a property to the 1P subject, namely *being tall*, which is a predicate involving a lexical concept with a descriptive content. In *I* as occurring in this sentence, there is no such predicate. In *This speaker is tall*, there are two predicative expressions, one occurring as part of the subject NP (*speaker*) and one occurring as part of the adjectival predicate (*tall*). Both predicates involve general concepts, i.e. SPEAKER and TALL. In *I* as used in *I am tall*, there is no such predicate, general concept or descriptive content, which could help to explain what *I* means. In line with this, the notion of *I* cannot be explained to anyone who lacks or has lost a sense of who *I* is (as in pathologies, see §5). Absence of predicative and descriptive information in referential uses of *I* is not just factual, but also explanatory for one of the most crucial aspects of self-reference in 1P: ‘immunity from error through misidentification’ (Prosser & Recanati 2012). This is because, if there is no description, none can fail to be recognised to hold of the referent, creating a potentially non-transparent self-relation. It is *because* 1P lacks descriptive information, while 3P forms of reference do not, that 1P is essential in thought *de se* and no 3P expression can be equivalent to it.

We conclude that 1P as occurring in the configuration identified in the previous section not only determines reference *de se*, while independent semantic or psychological factors do not; but that, in addition, the configuration in question is *foundational* for such self-reference, as opposed to merely an accident of its external expression. We suggest that the configuration in question exactly captures the *cognitive* distinctions required for reference *de se*, collapsing the traditional language-cognition dichotomy for this instance. We next argue that this conclusion is further supported with two independently known universal generalizations about pronouns expressing Person distinctions. The first of these has been explicitly invoked to support a *semantic* account of reference *de se* (Wechsler 2010), which would contradict our foundational perspective here. We will therefore now point out that, to the contrary, both generalizations directly follow from the grammar of personal pronouns alone, without any semantics of personal pronouns having to be invoked.

4 Two generalizations about Personal pronouns

According to the *Associative Plural Generalization* (APG; Moravcsik 1978:356; Greenberg 1988: 14; Cysouw 2003; Siewierska 2004: 82-83; Bobaljik 2008), first person plural (1PP) and second person plural (2PP) pronouns always have an *associative* rather than regular semantics: they never exclusively refer to a collection of speakers or addressees, respectively, but rather to collections of people that *include* the speaker or addressee(s), but also third parties. For example, *we* means SPEAKER+OTHER(S) in *We want you to come for dinner*, and SPEAKER+ADDRESSEE(S) (+OTHERS) in *Can we not resolve this peacefully?*. Personal pronouns are in this regard special and different from most and perhaps all plural 3P pronouns and 3P common nouns, which all display a *regular* plural semantics. Thus, a plural such as *dogs* of course only refers to sets containing all and only dogs, rather than any additional non-dog associates. In short, the generalization can be stated as in (31):

(31) **THE ASSOCIATIVE PLURAL GENERALIZATION (APG)**

1PP pronouns do not have semantically regular but associative plurals.

From a semantic point of view, the APG is unexpected: There would be no lack of semantic plausibility or utility in a 2PP pronoun that would include all and only addressees; or a 1PP pronoun that meant ‘the speakers’. And yet, such 1PP pronouns do not seem exist. Given that the APG is not predicted semantically, many have invoked a syntactic explanation, which has appealed to a universal inventory of Person features in Universal Grammar (UG). But as Wechsler (2010) suggests, this only formalizes the facts: Why should Person features in UG be unique in this way, requiring a special associative semantics? We now argue that the APG immediately follows from the grammar of Person.¹⁵

This is because, as noted, the notion of 1P cannot be explicated as ‘speaker’, ‘self’, or indeed via any other descriptive notion, since it lacks any lexical-descriptive content. There should be no expectation in the first place, therefore, that its plural should mean ‘speakers’. The assumption that it should, arises from a mis-specification of the empirical properties of *I*, which begins from ignoring the fact that it is grammatically specified for 1P, while ‘speaker’ is not. If in *I* as used in referential positions there is no predicate, general concept or descriptive content, as noted in the previous section, there is nothing under which any number of things can fall that belong to a certain class, in the way that an indefinite number of things can be dogs, tables or speakers. Without a predicate or general concept involved of which there could be many instances, pluralisation cannot apply, and the APG follows. There can be many *speakers*, and there can be me, you, and others, but there aren’t and can’t be many *Is*.

¹⁵ This account contrasts with Wechsler’s (2010) semantic account of the APG, which Wechsler also takes to support a semantic account of reference *de se*, based on Theory of Mind. We cannot go into the details of this proposal for reasons of space.

In line with this proposal, when *I* or *me* occur in grammatically predicative positions, they *lose* their Person features, and their semantics becomes regular. Thus, in the following examples, *I* and *me* are grammatically coerced into predicative rather than referential positions: (i) *There is no I in this dead body*, (ii) *Everyone has an I, but these Is are never the same*, (iii) *You only love this me, not that other one*, (iv) *Today I am not me*, etc. Here the Person features marked morphologically on these pronouns are not interpreted, coercing interpretations of them as general concepts, with a descriptive content induced from context. These concepts have *regular* plurals, and the APG does not hold for them, showing that marking for Person, removed in the foregoing cases, drives the APG.

While predicative uses of personal pronouns remove associativity in plurals, it is crucial that contrary to widespread claims, mass-chanting as in *We are the champions* shouted by supporters of a football team, is *not* an exception to associativity or the APG.¹⁶ *We* in these cases hardly entails *I am the champion* as uttered by any of the supporters, in the way that *These dogs are four-legged* necessarily entails of any dog in the group that *This dog is four-legged*.¹⁷ Moreover, several simultaneous utterances of a sentence like *I am the champion* do not entail the sentence *We are the champions*. Four cyclists at the Tour de France might finish a very close last day sprint, which gives the overall championship to the winner. Each of them claims to have crossed the finish line first, in which case they might all say at the same time *I am the champion*. But none of them takes this to entail the 1PP *We are the champions*. We conclude that 1PP in referential positions always satisfies the APG, as predicted by the present proposal, while it does not in predicative positions, where its Person-features are not interpreted.

Personal pronouns are different from all 3P forms of reference not merely semantically, but morpho-syntactically as well. In many languages, 3P pronouns are more integrated morphologically into the nominal system than 1P and 2P pronouns, which are often more irregular or ‘suppletive’ (Siewierska 2004). This ‘Suppletive Plural Generalization’ (SPG) and its occurrence in many typologically unrelated languages can hardly be a coincidence. To illustrate, in many Romance languages, regular nominal plurals, like 3P pronouns, are formed by adding a plural morpheme, [-s] to the bare noun, as seen in (32)-(33), while something different happens in personal (1P/2P) pronoun paradigms in the same languages (33)-(34):

(32) French (Romance)

maison (house) + *s* (PL) = *maisons* (houses)

fille (girl) + *s* (PL) = *filles* (girls)

¹⁶ Such mass-chanting along with ritual mass speaking during church service, etc., have been taken as the only cases where 1PP behaves as semantically *expected*, i.e. with the ‘regular’ semantics of ‘the speakers’ (Cysouw 2003: 73-74). An anonymous referee suggests, consistent with our rejection of this proposal, that ‘we’ in such mass-speaking does not actually mean ‘the speakers’ but ‘I and others here’.

¹⁷ Similarly, when a British person says today: ‘We beat Napoleon at Waterloo 200 years ago’, he can’t be stating that ‘I beat Napoleon at Waterloo 200 years ago’ (Sigurðsson 2017).

(33) Catalan (Romance)

fill (son) + *s* (PL) = *fills* (sons)
cotxe (car) + *s* (PL) = *cotxes* (cars)

(34) French (Romance)

1P: *je* (SG) > *nous* (PL) (cf. *je* + *s* = **jes*)
 2P: *tu* (SG) > *vous* (PL) (cf. *tu* + *s* = **tus*)
 3P: *il* (SG, M) + *s* (PL), *elle* (SG, F) + *s* (PL) = *ils* (PL, M), *elles* (PL, F)

(35) Catalan (Romance)

1P: *jo* (SG) > *nos-altres* (PL)¹⁸ (cf. *jo* + *s* = **jos*)
 2P: *tu* (SG) > *vos-altres* (PL) (cf. *tu* + *s* = **tus*)
 3P: *ell* (SG, M) + *s* (PL), *ella* (SG, F) + *s* (PL) = *ells* (PL, M), *elles* (PL, F)

While the 3PP pronouns in French and Catalan are perfectly integrated within the respective nominal morphological systems, in that they add the plural [-s] to form the plural forms, 1P and 2P rather show a case of suppletive plurality, or at least morphological irregularity (cf. Mel'čuk 1994, or Corbett 2005 for discussion). Thus, the morphological realization of 1P/2P pronouns exemplified by French and Catalan above are not as integrated within the nominal morphological system as the 3P forms, a pattern that we see occurring in many other languages from unrelated linguistic families:

(36) Hungarian (Fino-Ugric)

1P: *én* (SG) > *mi* (PL)
 2P: *te* (SG) > *ti* (PL)
 3P: *ő* (SG) > *ők*

(37) Polish (Slavic)

1P: *ja* (SG) > *my* (PL)
 2P: *ty* (SG) > *wy* (PL)
 3P: *on* (SG, M), *ona* (SG, F) > *ony* (PL, M), *one* (PL, F)

(38) Turkish (Turkic)

1P: *ben* (SG) > *biz* (PL)
 2P: *sen* (SG) > *siz* (PL)
 3P: *o* (SG) > *onlar* (PL)

(39) Quechua (Quechuan)

1P: *ñuqa* (SG) > *ñuqanchik* (PL, INCL), *ñuqayku* (PL, EXCL)
 2P: *qam* (SG) > *qamkuna* (PL)
 3P: *pay* (SG) > *paykuna* (PL)

These cases all show that plural personal pronouns not only show cross-linguistic semantic irregularity (i.e., associativity), in contrast to 3P pronouns, but also morphological irregularity (cf. Cysouw 2003, or Corbett 2005). The latter is even less likely to

¹⁸ Note that in the Catalan example, the 1PP and 2PP forms include a morpheme meaning *other*, which doesn't appear with the 3PP, and that no doubt suggests a semantically associative interpretation that the 3PP lacks.

be explained by semantic or psychological principles than the former. While the SPG is by no means a cross-linguistic absolute universal, the split in plural marking in pronouns is widespread enough to sometimes be considered an implicational universal. For instance, Moreno-Cabrera (1999: 277) provides a Marking Rule for Personal Pronouns, which yields the hierarchy of implicational marking in (41):

(40) Marking rule for personal pronouns

Whenever in a given language a personal pronoun (1P/2P) is marked by a nominal inflectional rule, 3P pronouns will always be affected by the same rule, but not the other way around.

(41) Personal pronoun marking hierarchy

1P < 2P < 3P

This hierarchy of marking echoes Greenberg Universal number 44 (Greenberg 1963:96), according to which, if a language has Gender distinctions in the 1P, it always has Gender distinctions in the 2P or 3P or in both. This hierarchy of implications seems to correlate with that of the associativity of the pronominal systems, with 2PP both less associative and suppletive than 1PP. This is shown for example for the Semitic pronouns below and is also visible in the Quechuan example above. Notice that in the Semitic examples in particular, Gender morphemes (sometimes argued to be nominalisers, e.g. Picallo 2008) seem to co-occur with regular (nominal) plurals.¹⁹

(42) Arabic (Semitic)

1P: ana (SG) > nahnu (PL)

2P: anta (SG, M), anti (SG, F) > antum (PL, M), antunna (PL, F)

3P: hua (SG, M), hia (SG, F) > hum (PL, M), hunna (PL, F)

(43) Hebrew (Semitic)

1P: ani (SG) > anakhnu (PL)

2P: ata (SG, M), ati (SG, F) > atem (PL, M), aten (PL, F)

3P: hu (SG, M), hi (SG, F) > hem (PL, M), hen (PL, F)

The generalization of interest is that 1P pronouns display more morphologically irregular plurals than the 2P pronouns, which in turn show more morphologically irregular plurals than the 3P. This hierarchy falls in line with a hierarchy of semantic irregularity in the pronominal plurals as well, with the highest degree of irregularity in 1PP, which must be associative, while 2PP can be associative, and 3PP cannot be associative:

(44) Hierarchies

Semantically irregular plurals: 1P < 2P < 3P

Morphologically irregular plurals: 1P < 2P < 3P

¹⁹ This is also of interest insofar as Gender features on pronouns capture descriptive information about referent that we have argued personal pronouns crucially lack.

This correlation can hardly be a coincidence, and its significance in the present context is that extra-linguistic or semantic factors do not seem to explain it. Grammatical ones do, such as specification of Person but not descriptive content in personal pronouns, and their concomitant lesser similarity than 3P to nominal paradigms.

5 Linguistic variation in the grammar of Person

We have now made our case that the grammar of Person is constitutive of, and foundational for human-specific forms of selfhood correlating with *de se* forms of reference as expressed in language, giving us the currently best available evidence for their cognitive basis in the human mind/brain. If so, grammar has an epistemological significance: it mediates human-specific forms of knowledge and selfhood. Since we assume these forms to be universal, the grammar of Person is predicted to be universal as well. This prediction is consistent with widely documented variation in *pronoun* inventories, which is expected on our view: such variation concerns how Person distinctions (among other grammatical relations) are *lexically realized* – which often does not seem to affect the Person distinctions themselves. For example, it is often noted that Thai has twenty-seven different lexical forms expressing 1P (Siewierska 2004: 228), which behave like normal lexical noun phrases, but what is *not* disputed here is that these forms of 1P, or that there is a Person system.

For reasons of space, however, we will now leave such lexically-related cross-linguistic variation in neurotypical individuals aside (for further remarks see Martin & Hinzen 2014; Siewierska 2004), and turn to clinical linguistic variation viewed as a possible testing ground for the following prediction of our account: If 1P in the grammatical configuration specified is essential to human-specific forms of self-reference, then the ways in which selfhood can clinically disintegrate should be *mirrored* in linguistic profiles associated with the relevant clinical conditions, specifically in the use and distribution of personal pronouns. Autism Spectrum Conditions (ASC) and schizophrenia (SZ) (which may be related: Hommer & Swedo 2015), have been independently described as involving a disorder of normal selfhood (ways of relating to oneself). We now review what is known about pronoun use in these conditions. If we saw it distinctively affected, a link between disorders of self-referential thinking and grammar would thus be established, supporting a connection between them, as entailed by the present account.

5.1 Grammatical Person in ASC

In fact, one of the most classically noted language anomalies in ASC are pronoun reversals in spontaneous speech, e.g. a child uttering ‘You want milk’ meaning to communicate that s/he (the child) wants milk. These reversals classically concern 2P and 3P NPs used where the speaker intends to self-refer and 1P would be canonical. The inverse reversal (1P used in other-reference where 2P or 3P are expected) is not documented in the literature, except in cases of echolalia, where a child simply repeats a parent’s utterance. A recent longitudinal corpus study confirming this asymmetry (Dascalu 2014), also reports that by far the most widespread replacement of 1P forms of self-reference is through 3P expressions such as the child’s own name or 3P pronouns. This allows us to speak of an *asymmetrical Person shift* away from personal forms of reference to 3P forms in the children’s production. This shift further accords with a preference for 3P modes of self- and other-reference in experimental naming tasks, where children are asked to name pictures of themselves or the experimenter. In such tasks, a relative avoidance of 1P and 2P relative to 3P is now attested even across language externalization modalities. Thus, Shield et al. (2015) report such a pattern for children with ASC whose first language is American Sign Language, consistent with a pattern found earlier in hearing children with ASCs in three independent studies (Jordan 1989; Lee & Hobson 1994; Mizuno et al. 2011).

Note that, at the same time and crucially, self-reference as such is *not* affected in this population: the child above, in particular, is *not* confused over who wants milk. Rather, the problem precisely arises where self-reference has to take on a specific grammatical form. In line with this, Hobson & Meyer (2005) found that in a task where children had to communicate where on the body a sticker had to be placed, the children with ASC succeeded in the communicative task, yet never pointed to a place on their own body, as typically developing children did: not communication or perspective on self-other as such are disturbed, but the ways of normally embodying a 1P perspective through pointing. The significance of a deficit in personal and deictic forms of reference is further supported by (i) significant impairment in autobiographical narrative (which is 1P, Brezis 2015); (ii) better understanding of 3P rather than 1P false-beliefs (Williams & Happé 2009); and (iii) the use of 1P accusative clitics as a distinguishing mark between ASC and Specific Language Impairment (SLI) cohorts, who otherwise had very similar grammatical profiles (Durrleman & Delage 2016).

In their pronoun study mentioned above, Lee & Hobson (1994) asked: Could the anomalous use of personal pronouns reflect not just linguistic competence but also the psychological experience of selfhood? We answer: precisely so, if mis-use of personal pronouns correlates with an abnormal self-relation, perhaps more similar to the one we have with objects and persons identified in 3P, as our theory implies (see also Hinzen & Schroeder 2015). While it is logically possible that mental disorders classed as involving disturbances of selfhood are caused by a non-linguistic disturbance, it would need to be explained, in non-linguistic terms, why certain linguistically specific dysfunctions arise, which leave non-linguistic aspects such as self-reference untouched.

Indeed, it transpires that pronoun misuse in ASC is only the tip of an iceberg of problems with linguistic reference in this disorder (Modyanova 2009; Baltaxe & d’Angiola 1996; Banney et al. 2015; Norbury et al. 2014; Hinzen 2017; Schroeder 2019). Evidence from this literature suggests that more grammaticalized forms of reference such as pronominal or definite-anaphoric forms are affected more in ASC than indefinite or lexicalized ones. It is difficult to derive the spectrum of language deficits in ASC from a non-linguistic neurocognitive deficit, such as theory of mind (ToM) (see further, Hinzen et al. 2019). In fact, ToM has long been shown to be developmentally linked to language itself (Lind & Bowler 2009; Hale & Tager-Flusberg 2003; Astington & Jenkins 1999; de Villiers & Pyers 2002; Paynter & Peterson 2010).

In sum, there is rich evidence that ASC not only involves prominent linguistic deficits, but that, within the grammar of reference, non-personal forms of reference are less affected than personal ones. There is a connection, therefore, between the disturbance of selfhood in ASC and grammar, as predicted by the view proposed here, on which grammar is inherent to forms of self-reference critical to neurotypical forms of selfhood.

5.2 Grammatical Person and reference *de se* in schizophrenia (SZ)

One of three core symptoms of SZ according to current diagnostic criteria are delusions, which involve personal forms of reference by definition. Thus, delusions take the forms of statements like *I am Jesus (Christ)* or *The Mafia is trying to kill me*, but not *Someone is Angela Merkel* or *Some neighbour wants to kill any immigrant*. Descriptively, they depict a patient’s difficulties for appropriately locating himself in deictic space, a task that requires a speaker’s coordinating the 1P, which identifies him as the centre of this space (*I*), and 3P objects and descriptions of them in this space (e.g. keeping himself as identified in 1P apart from *Jesus*, or not applying the property of *being persecuted* to himself, even if it may apply to other people). In line with this, a delusional sentence like *I am Jesus* loses the content it has when uttered in mental health, where it would be either uttered non-literally (e.g. as metaphor or hyperbole), or by an actor to identify himself playing a role on screen. Crucially, when uttered in delusional states, the same sentence ceases to have either of these meanings (else it would not be clinically rated as a delusion, see further Hinzen et al. 2016). The change in meaning specifically concerns the *de se* reading of this sentence, which it would necessarily exhibit in mental health: we effectively don’t know any more who the speaker is referencing – Is it himself, or Jesus? Herein lies the pathology: the connection between grammar and reference *de se* that we have sought to establish here, is broken. As this is the pathological case, this confirms their essential link in mental health.

A second major symptom of SZ is auditory verbal hallucinations (AVHs): a patient perceives speech where there is none. The phenomenon is more distinctive, however, and clinically the most attested and typical case is that the voice(s) are not

regarded by the voice hearer as an *I* (i.e. a version of the voice-hearer’s self), but as a *he/she*, where the relevant (fictitious) person can be a relative, God, Satan, or some unrecognized third party. We therefore observe a 3P shift in what effectively is self-produced thought and speech. Literal transcriptions of voice talk (Tovar et al. 2019) have shown that the phenomenon is linguistically even more specific, however. In particular, while the voices usually refer to the voice hearer in 2P or 3P, they use very little 1P themselves. That is, self-generated mental activity mis-heard as external speech is mis-located in some third person, which in turn is itself *deprived* of a 1P self: another disturbance in the deictic space, now at the level of perceived speech, rather than delusional statements, as above. Crow (2010) has argued for a disturbance of the deictic space as a general analytical concept useful for understanding SZ: first personal control over the thought process is lost, leading to other clinical phenomena such as the belief that someone else thinks my thoughts, can put them into my head, or can hear them even if I don’t talk. These are forms of thought where thinking has lost its normal deictic anchors in a 1P self, which can distinguish itself from 2P or 3P objects of reference and can evaluate structures with embedded clauses depicting thought contents, such as *I think that...* vs. *He thinks that...* (Hinzen et al. 2016).

In conclusion, at least the main two ‘positive’ symptoms of SZ, namely delusions and AVHs, support the significance of the grammatical Person system for profiling the cognitive anomalies and disturbances of selfhood seen in SZ, reinforcing the link we have argued for here between human-specific forms of self-referential thought and grammar. ASCs and SZ illustrate a mental change in selfhood plausibly linked to a disruption of the cognitive function implemented through personal forms of reference in language.²⁰

6 Conclusions

We set out to explore whether the notion of ‘first-person thought’ in the sense of a long philosophical tradition involves the grammatical category ‘first Person’ occurring in it inherently, as part of its cognitive specifications. The empirical evidence we have collected here suggests, first, that thought *de se* as expressed in language does indeed covary with grammatical factors, which determine whether *de se* thought is uniquely expressed or not. The configuration in question involves 1P in a grammatically referential and unbound position in a matrix clause, with or without an additional 1P in an embedded position. In thought attributions in 3P, *de se* readings can be speaker-intended without being grammatically encoded, yet in this case, 1P thoughts are attributed too, re-establishing the configuration. This alignment between thought *de se* and grammar is clearly not arbitrary and asks for a theoretical framework that would

²⁰ Linguistic studies of schizophrenic speech production are rare, but Rochester & Martin (1979) found pronoun use to be distinctive of a group of patients with schizophrenia and formal thought disorder, and Watson et al. (2012) found use of personal pronouns to be predictive of disease onset in a genetic high-risk population.

explain it. We have argued here that it suggests that grammar plays a foundational role for reference *de se* as constitutive for normal human self-reference and thought. This holds insofar as the grammatical categories involved do not reduce to (or have translations in terms of) any non-grammatical ones, hence for the purpose of this discussion should be regarded as primitive. This conclusion is further in line with the fact that both a semantic and a morphological universal generalization about personal pronouns follow from their grammar, but not on grammar-independent grounds; and with the fact that in major mental pathologies independently described as disorders of selfhood, anomalies in the use of the grammar of Person are prominently seen and critical to symptoms.

These conclusions do not make it logically *impossible* that thought *de se* might still take place in some mental or neural space in the brain that is independent of the language network and of what cognitive distinctions are mediated by it. Positive evidence for such independence, however, would be required and may be methodologically impossible to obtain, if, in the absence of language, the relevant distinctions in ways of referring to oneself cannot even be made. Nonetheless, the ultimate philosophical significance of our point depends on addressing this foundational issue at other levels of description, including the relation between language and cognition in neurotypical and atypical development, and the brain basis of language and the specific kinds of thought associated with it.

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