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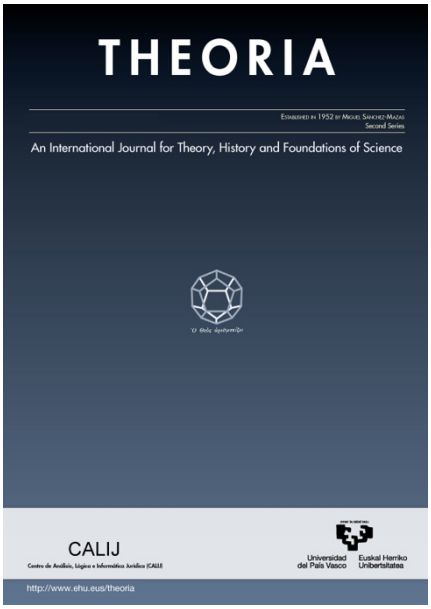

Bermúdez's view on inner speech: a critical assessment

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Bermúdez's view on inner speech: a critical assessment

(La teoría del habla interna de Bermúdez: una evaluación crítica)

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ABSTRACT: José Luis Bermúdez defends the view that inner speech is necessary for thinking about thoughts, what he calls 'intentional ascent'. On his account, we can only take a thought as an object of further thought if the target thought is "held in mind" in inner speech in a way that its canonical structure is revealed. Two paradigm cases exemplify this view: reflexive evaluation and propositional mindreading. In this article, we examine Bermúdez's view and argue that 1) the process of intentional ascent *via* inner speech is empirically untenable and psychologically unrealistic, and that 2) the view, in demanding that words reveal the canonical structure of thoughts, runs into a dilemma where inner speech becomes either superfluous or inaccurately described. We finish by gesturing towards a more encompassing view of the role of inner speech in thinking that, while rejecting Bermúdez's more problematic claims, maintains his main insight of the relevant role of inner speech for human cognition.

KEYWORDS: inner speech; intentional ascent; conscious thinking; reflexive thinking, propositional mindreading.

RESUMEN: *José Luis Bermúdez defiende la idea de que el habla interna es necesaria para pensar sobre pensamientos, lo que él llama "ascenso intencional". Según su teoría, solo podemos tomar un pensamiento como objeto de otro pensamiento si el primero se "mantiene en la mente" en el habla interna de manera que se revele su estructura canónica. Dos casos paradigmáticos ejemplifican esta tesis: la evaluación reflexiva y el mindreading proposicional. En este artículo, analizamos la teoría de Bermúdez y argumentamos que 1) el proceso de ascenso intencional a través del habla interna no se sostiene empíricamente y no es realista a nivel psicológico, y que 2) la teoría, al exigir que las palabras revelen la estructura canónica de los pensamientos, se enfrenta a un dilema en el que el habla interna o bien se vuelve superflua, o bien se describe de forma no apropriada. Para acabar, apuntamos hacia una visión más amplia del papel del habla interna en el pensamiento que, aunque rechace las afirmaciones más problemáticas de Bermúdez, mantiene su intuición principal acerca de la relevancia del habla interna en la cognición humana.*

PALBRAS CLAVE: habla interna; ascenso intencional, pensamiento consciente, pensamiento reflexivo, mindreading proposicional

SHORT SUMMARY: In this paper, we assess Bermúdez's theory of inner speech as necessary for intentional ascent and argue that it is 1) empirically untenable and psychologically unrealistic, and that 2) given what it requires from inner speech, it runs into a dilemma where inner speech becomes either superfluous or inaccurately described. We finish by gesturing towards a more encompassing view of inner speech in thinking.

1. Introduction

José Luis Bermúdez has argued in various of his works that inner speech is required for conscious thinking about thinking, that is, for higher-order thought or second-order dynamics. This claim is part of a broader investigation into the role of (natural) language in human and non-human cognition. In

his 2003 book *Thinking without words*, Bermúdez develops a framework of thinking in non-linguistic creatures. He argues that non-linguistic thinking reaches a limit in the types of thinking that involve *intentional ascent,* a cognitive process that requires the use of language. His central claim regarding the thought abilities of linguistic creatures is that

> [A]ll thinking that involves intentional ascent (roughly, all thinking that involves thinking about thoughts) requires the capacity for semantic ascent (roughly, the capacity to think about words). (Bermúdez, 2003, p.151)

Thinking about thoughts (intentional ascent) requires thinking about words (semantic ascent), in his formulation. Bermúdez's approach belongs to a family of views called 'format views' (Martínez-Manrique and Vicente, 2015), according to which inner speech is the vehicle of thought and the "format" in which some of our thoughts are encoded. Carruthers (2011) and Clark (1998) are also representatives of this approach. Interestingly, Bermúdez (2003, pp. 158–164) argues that Clark's account is correct but incomplete because he shows that we engage in second-order dynamics using language, but for Bermúdez (2003, p. 158) "what we need is an argument that second order cognitive dynamics can only be undertaken by language-using creatures". Hence, his goal is to offer an account of the *necessity* of language (inner speech)[1] in specific forms of human cognition, i.e., second-order thought. To this end, Bermúdez develops and further defends the view with a more detailed argument in the article "Inner Speech, Determinacy, and Thinking Consciously about Thoughts" (Bermúdez, 2018a).

In this paper we aim at engaging with Bermúdez's view on intentional ascent by arguing that the view 1) is empirically untenable and psychologically unrealistic and 2) in demanding that words reveal the canonical structure of thoughts, it runs into a dilemma where inner speech becomes either superfluous or inaccurately described. This discussion leads us to gesture towards a picture in which thinking *with* words occupies the central stage, instead of thinking *about* words. We believe that this alternative avoids certain less compelling claims while remaining congenial to Bermúdez's main insight.

2. The view: intentional ascent requires semantic ascent

Bermúdez's view is that there are certain thinking operations that are only available to humans because they are capable of producing language: the operations that involve "explicit" intentional ascent (2003, p.166) or conscious thinking about thinking. In the 2018a chapter, Bermúdez clarifies the explanandum of the thesis that intentional ascent requires semantic ascent: "[t]he phenomenon under discussion is conscious thinking about thinking —that is to say, consciously taking a thought as an object of thought" (p.200). This kind of thinking allows us to evaluate our thoughts in accordance with epistemic standards. An example is *reflexive thinking,* or, as stated in Bermúdez (2018a), "reflective evaluation and monitoring of one's own thinking" (p.201). Reflexive thinking typically includes evaluating evidence for beliefs, such as probable consequences of action, and evaluating inferences between thoughts:

> Such reflexive thinking involves having the target thoughts in mind—entertaining them consciously and considering how they relate to each other logically and evidentially. (2003, p.159)

To evaluate our thoughts in this way, Bermúdez argues, we must apprehend the target (first-order) thoughts consciously and in a way that allows the second-order thought to entertain them (Bermúdez, 2010, 2018a). First-order thoughts (or any thought to which we have access) must be represented a) in a personal-level, conscious vehicle, and b) the vehicle must be linguistic. These requirements exclude that Language of Thought representations can be the vehicles of thought, as they are not consciously available personal-level representations. This vehicle is inner speech, and it is what allows us to perform logical operations between thoughts:

[1] Bermúdez, actually, defends the necessity of *natural language sentences*. He believes their most common form is inner speech, but grants that one might 'visualize the written form of a sentence' or "think about a thought through a public utterance or inscription". (2018a, p. 203-4).

> It is clear, moreover, that reflective belief revision will involve explicit consideration of the formal logical relations between thoughts—and we have no understanding of the logical relations between thoughts except when those thoughts have linguistic vehicles. (Bermúdez, 2003, p.170)

Hence, in his view, the logical structure of a thought becomes conscious and accessible for second-order thought *via* being formulated in inner speech. One cannot think about logical relations between thoughts 'without somehow 'holding in mind' the thoughts between which they hold' (Bermúdez, 2018a, p.201.) This is why intentional ascent (thinking about thinking) requires semantic ascent (thinking about words). These "words" are inner speech:

> What we introspect when we introspect our propositional thoughts in the manner required for the processes of second-order cognitive dynamics is inner speech. (2003, p.160)

This is Bermúdez's *explanandum*, and the function for which inner speech plays an essential role. In a slightly different formulation: "Rehearsing thoughts in the "perceptible garb" of inner speech enables them to be the objects of further thoughts" (Bermúdez, 2018a, p.199).

3. Inner speech and thinking about thinking: an empirically untenable picture

Firstly, we would say that it is hard to pin down what exactly is meant by "rehearsing thoughts" or "holding them in mind" in inner speech. One interpretation is that "holding thoughts in mind" is a temporally situated step in the second-order process, and that for a second-order thought to occur, one must linguistically articulate the first-order thoughts first in order to grasp them. In another perhaps more charitable interpretation, the first order thoughts "held in mind" are directly embedded or can already be found within the second-order dynamics. In either case, the first-order thought is described as necessarily being "held in mind" in inner speech (i.e., consciously) in the process of thinking about thinking. One possible understanding of what Bermúdez seems to refer to here is that the first-order thought has to be retained in working memory for it to be evaluated, similarly to what happens when we briefly 'hold in mind' a phone number to then directly dial it.[2] What this suggests is that by "holding in mind" the linguistically articulated first order thought, he is providing a psychological description of how we engage in second order thinking and the role of inner speech within it.

In Bermúdez (2003), he describes three paradigm cases that require intentional ascent and are *not* available to non-linguistic creatures (see Chapter 9 in Bermúdez, 2003): reflexive thinking, higher-order desires, and propositional mindreading. In Bermúdez (2018), only two of them remain: reflexive thinking (which changes to "reflexive evaluation") and propositional mindreading. Bermúdez claims that the explicit representations entailed by these processes can only take place in a linguistic, natural language medium. The reason is, again, that we need the ability to "hold thoughts in mind" to think about them. We will argue that there is empirical evidence showing that reflexive evaluation and propositional mindreading can occur without inner speech, and that the way he describes the role of inner speech in intentional ascent also seems introspectively unrealistic.

3.1. REFLECTIVE EVALUATION

The first paradigm case that Bermúdez (2018a, p. 201) presents is reflective evaluation and monitoring of one's thinking:

> We engage in such reflective evaluation and monitoring, for example, when we think about the evidential relations between our judgments and the evidence that we have for them. Whether those evidential relations are deductive or inductive, they hold between thoughts or propositions (which for present purposes I take to be equivalent). And so, one cannot think about those evidential relations without somehow "holding in mind" the thoughts between which they hold.

[2] We thank Agustín Vicente for suggesting us this reading.

Second-order thought needs inner speech because sustaining thoughts in language in this way allows us to think about the evidential relations that hold between them. This leads to the consequence that any thought from which one consciously derives an inference or draws an evidential relation has to be "held in mind" in language, i.e., inner speech:

> [I]t is only possible to evaluate and reflect on the extent to which one belief implies another (...) or the extent to which a belief is supported by a particular type of evidence if one is able *explicitly to hold those beliefs in mind.* (Bermúdez, 2003, p.170, emphasis added)

This use of inner speech, however, does not find support in the empirical literature. We will argue that there are empirical studies showing that children at the early stage of 4 to 6 years are capable of engaging in conscious reflexive thinking. The relevant aspect to take into account when assessing these experiments is that inner speech is said to develop at the age of 6-7 (Vygotsky 2012/1934; Alderson-Day & Fernyhough, 2015)[3] which makes it very improbable that children below these ages are using inner speech when they engage in such tasks (more on this below). The empirical literature on forms of reflexive thinking is quite abundant, and developmental psychologists have researched and found evidence for children's abilities of abstract reasoning (Walker et al. 2016), discerning causally relevant variables (Goddu et al. 2020), revising their higher-order beliefs depending on the strength of the evidence (Kimura et al. (2019) and other metacognitive processes such as distinguishing mental states of knowledge from those of uncertainty (Cook et al., 2011). In these studies, however, children's metacognitive abilities are measured indirectly, i.e, inferred from their behavior, and so the studies are evidence for *implicit* forms of reflexive thinking. Such forms would not target Bermúdez's claim, as he specifically focuses on the possibility of engaging in *conscious* or *explicit* reflexive thinking.

There is empirical evidence, however, that shows that children between 4 and 6 years old are also capable of conscious reflexive thinking. A study by Lagenhoff et al. (2024) shows that 4- to 6-year-old children seem to think reflexively in this way. In their study, they wanted to know whether exposing children to the disagreement of others would decrease their confidence in their beliefs. First, they taught children a non-existent category ("blicket"). They then asked them to point at those objects that were "blickets" and assessed their confidence in their beliefs with questions such as: "In a scale from 1 to 4: How sure are you that X toys are blickets?" or "Are you really sure or just a little sure?". They then asked a confederate to point at "blickets" in front of the children. The answers were either in agreement or in disagreement with the children's. When the confederate's answers disagreed with the children's, their confidence judgments decreased significantly in the second measurement.[4] Finally, in a subsequent period of "information search", children in the disagreement condition were found more active. We believe this is an empirical case of children evaluating "the extent to which a belief is supported by a particular type of evidence", which is one of the possibilities that Bermúdez explicitly considers as reflexive evaluation. Importantly, the confidence questions force children to explicitly reflect on that matter, indicating an *explicit* metacognitive capacity (and thus, distinguishing this experiment from the other results on implicit reflexive thinking). One possible source of skepticism with this case is that perhaps older children in the group, i.e., those 6 years old, could be using inner speech for assessing the confidence in their beliefs. However, no significant differences were found in the result between 4–5 and 6-year old children, which seems to discard this possibility.

Another relevant study without this potential worry related to age is the one by Gardier & Geurten (2024), where they carefully measured the metacognitive abilities of children between the ages of 2.5 and 4.5. In this study, infants were presented with a memory recognition task. After each forced-choice memory decision, they measured their "retrospective confidence judgment". This measure was two-fold. First, they asked them to indicate their degree of certainty using two pictures, i.e., pointing at a picture with a confident character if they were sure of their answer, or another one

[3] See also Geva & Fernyhough (2019) for an examination of the causal relation between the emerging of inner speech in early childhood and the maturation of the dorsal language stream, and the review of Alderson-Day & Fernyhough (2015) for evidence about the emergence of the phonological effect (usually taken as evidence for covert verbal rehearsal) around 7 years of age.

[4] Children's confidence decreased *only* when the confederate was introduced as an expert, which, according to the authors, shows children's sensitivity to the epistemic status of whom they were disagreeing with.

with a doubtful character if they were not. Second, for each trial, children were given the possibility of asking for a cue when they thought they had given an incorrect answer. They were told by the experimenters that "they had to ask for the cue only when they felt like they needed it to select the correct response" (p. 1248). In both studies, then, under the term "metacognition", children are tested to see whether they were able to think about their own thinking, e.g., to judge their confidence in their beliefs based on their observations and weighting the beliefs of others. The explicit nature of the task (i.e., reporting and considering the need for help) ensures that children are having a *conscious* thought about their thoughts, and that the results are not explainable, for instance, by there being subpersonal mechanisms subconsciously "tipping the scale" in their decisions.

These two studies presented show cases of conscious reflexive thinking without inner speech, thus putting pressure on Bermúdez' account. However, it is true that such studies *do not rule out* the possibility of children engaging in private speech, that is, talking out loud, while they answer the confidence questions. Private speech, in this case, would presumably allow them to "objectify their thoughts" so that they could assess the evidence they have for them. Note, however, that not any form of private speech would help Bermúdez's case, only the hypothetical case in which children in the experiments utter and "hold in speech" the thought that is the object of metacognition (more discussion on this in Section 4).

This potential problem is not found in other studies that examine inner speech in reasoning using articulatory suppression techniques (Nedergaard et al., 2023), thus being more conclusive evidence against Bermúdez's account. In articulatory suppression, the ability to rehearse verbal information is blocked by instructing subjects to perform a task while producing language out loud. If the performance of the task is affected, it is concluded that the task had a linguistic component. In the study of Evans & Brooks (1981), they tested whether phonological suppression had an effect on revising the logical validity of inferences. In their experiment, subjects were presented with various valid or invalid logical inferences (e.g., If it is not a triangle, then it is not red. It is not red. Then, it is not a triangle) and they had to decide whether or not the conclusion follows logically. To impede linguistic rehearsal for solving the problems, a group of subjects had to utter a counting sequence repeatedly while solving the task (the 'articulation condition'). Overall, this experiment required that subjects engaged in reflexive evaluation and thought about the (deductive, in this case) "evidential relations between our judgments and the evidence that we have for them" (to use Bermúdez's phrasing). Not being able to use inner speech would impair the reasoning, according to him. However, the results showed that subjects in the articulation condition did not perform any worse (surprisingly, they were found to answer faster than the control group).

While we believe such empirical evidence is conclusive regarding the necessity of inner speech for intentional ascent in the case of reflexive thinking, we also think that it is worth pointing at some *daily-life* situations in order to intuitively doubt the idea that thinking about thinking necessitates inner speech as the format that "holds in mind" our thoughts. Bermúdez does not give the reader any examples of how the reflective process presumably unfolds and how inner speech plays its role (which makes this rather intuitive assessment of the theory a bit harder), but we contend that daily-life situations that are potential candidates of reflexive thinking seem to occur without "holding in mind" in inner speech the thoughts we are thinking about.

SCHOOL HOLIDAY

> *I observe from the street that the light in the apartment I share with my partner is on, and it is a moment of surprise because, at this time, I do not expect her to be home from teaching at the school. While I look for reasons why this would be so, I remember seeing an image of a newspaper front page that said that today is a city holiday. Then, I remember her telling me that one of the perks of this job was that, whenever there is a city holiday, schools end classes earlier than normal. I conclude, then, that my partner is home, and that's why the light is on.*

Answering the question of why my apartment's light is on entails reflection on "the extent to which one belief implies another" (Bermúdez, 2003, p.170). The kind of reasoning going on in this case is deductive reasoning whose premises could be something like: 'It's a holiday; if it's a holiday, school classes end at midday and my partner will be home early'; school classes end at midday and my partner will be home early'. However, each premise of this deduction need not be enunciated in inner speech;

it suffices to remember the newspaper front page from earlier in the morning by which you learned about the holiday to reach the conclusion that my partner is home, which might or might not be enunciated in inner speech. Notice that we are not presenting a case of unconscious reasoning, but rather how an episode of reflective thinking would unfold consciously. We believe that this ordinary example, and other similar ones, intuitively motivate the idea that this sort of reflexive thinking can be done ordinarily without necessarily using inner speech and, were our reflective operations in need of uttering every proposition in inner speech, this would be too cognitively costly.

A couple of remarks are in order before moving to the case of propositional mindreading. First, we acknowledge that this intuitive example might not alone convince Bermúdez or anyone favoring his account, but we think that it can, at least conditionally, add more pressure on his account on top of the empirical cases presented. Second, in presenting these empirical and intuitive cases against the thesis of intentional ascent, we are not denying that inner speech might enhance, assist, and be used in many cases of conscious reflexive thinking and evaluation, mostly in adults and children after 6-8 years old. Its cognitive role in *supporting* and *enhancing* reasoning processes, as well as other executive functions such as inhibition, task-switching and planning is well documented in inner speech studies (Alderson-Day & Fernyhough, 2015; Petrolini et al., 2020), which overall speaks in favor of weakening the claim of the necessity of inner speech for such cognitive processes.

3.2. PROPOSITIONAL MINDREADING

The second paradigm case for intentional ascent is propositional attitude mindreading, that is, "consciously attributing thoughts to others in order to make sense of and predict their behaviour" (Bermúdez 2018a, p. 201). The kind of propositional attitude mindreading Bermúdez focuses on is to be distinguished from other forms of social coordination in which no explicit attribution of thoughts is done, and importantly, from other forms of mindreading such as perceptual mindreading, in which subjects simply "need to be able to represent the fact that the agent is perceiving that state of affairs" (Bermúdez 2018a, p. 202). Whereas perceptual mindreading is world-oriented, and attributes a state of affairs as perceived by another subject, propositional mindreading involves metarepresentation, and entails representing how the subject is *representing* a state of affairs (propositions, thoughts, or belief-states held by the subject) (Bermúdez, 2003; 2018b). Also, propositional states of others must be consciously accessible to consider them in one's course of action; they are conscious insofar they are a part of "conscious practical decision-making" (2018b, p. 124). Conscious propositional mindreading is not possible without inner speech, again, mediating metarepresentation or the process of "holding a thought in mind". In Bermúdez's phrasing: "it is impossible explicitly to attribute a propositional attitude to another subject without explicitly representing the thought that is the content of the propositional attitude" (2018b, p. 202).

The problem, as with the previous case, is that there is empirical evidence against conscious propositional mindreading necessitating inner speech. Propositional mindreading is standardly measured with false-belief paradigms (Wimmer & Perner, 1983), and false-belief tasks are considered by Bermúdez (2018b) cases of propositional mindreading. There has been much discussion regarding the role of language in belief attribution, both in children and adults (Milligan et al., 2007; Newton and de Villiers, 2007, among others), but here we will focus on Forgeot d'Arc B & Rasmus (2011), who present a study with people from ages 19–31 to specifically examine the role of inner speech in belief attribution. For this, they use a completely nonverbal paradigm consisting of silent animated cartoons. Subjects were presented an animated film until the suspense scene froze, and they had to choose the most plausible end of the story from the two that appeared on the screen and give their response on a response box. The study used verbal shadowing in the dual-task paradigm to inhibit inner speech, so that "a sufficiently demanding verbal shadowing task engages phonological representations to such an extent that it is not possible to concurrently formulate propositions using inner speech" (Forgeot d'Arc & Rasmus 2011, p.978). The concurrent shadowing task consisted of repeating each word as it was being heard from their headphones. Results show that verbal interference had an effect on performance, which decreased, but no effect on belief attribution. Participants were able to attribute beliefs despite having their inner speech interfered with, and hence, their results spoke against the hypothesis that verbal rehearsal is necessary for belief attribution. The attribution of the belief is *conscious* because participants were explicitly asked for the end of the story.

In the study of Dungan & Saxe (2012), they used a similar procedure of showing participants a video of live actors who were dressed as animals, and in each video a rabbit hid carrots under a box, then a cat came and moved the object first to a second box, and then to a third box. During the movements, the rabbit was either present ("true belief") or absent ("false-belief"). Participants had to answer for the most likely ending of the video. The study tested the effects of different kinds of shadowing (verbal shadowing, no shadowing, or rhythms) and found that performance hindrance was not specific to the verbal kind. Overall, then, there seems to be empirical evidence from these different domains suggesting that conscious belief attribution functions quite independently from inner speech.

As we also argued for the case of reflexive evaluation, we contend that the use of inner speech described by Bermúdez seems psychologically inaccurate in daily-life situations. Imagine the following case of propositional attitude attribution:

> A TEENAGER IS FOUND OUT
>
> *A teenager wants to go out with her friends when she is not supposed to. She says she's going to sleep and hides pillows under her blanket to form the impression that she's sleeping in her bed. The teenager sneaks out, but her mom finds out.*

In Bermúdez's account, the parent would need to 'hold in mind' and explicitly represent (using inner speech) the thoughts that she will attribute to her daughter. For instance, that she wanted to pretend she was sleeping; that she thought that the pillows would do the trick, and that she does not yet know that she has been caught. (The last one is a false-belief attribution: the mom attributes to the daughter the *false belief* that the plan worked.) However, the mom can propositionally mindread her daughter in various ways without having to hold in mind or enunciate such thoughts in inner speech. The propositional states of her daughter are consciously accessible to her and can take part in her conscious, practical decision-making' (Bermúdez, 2018b). For instance, she might decide to amuse herself the next day and ask her trick questions about how she could possibly get any sleep given the unusual noises coming from the street, and she might mindread her further and predict that she will probably evade these questions by making more things up. So, the mother can attribute thoughts to her daughter, plan to act accordingly (ask her tricky questions the next day) and predict her behavior (creativity in her answers), without having to formulate and consciously access a linguistic representation of her daughter's belief and without articulating anything in inner speech. It should be noted that of course it is possible to reconstruct the case by making explicit in inner speech each of the steps in the process of belief attribution but this doesn't seem the typical way of proceeding.

3.3. INTENTIONAL ASCENT IN AN EPISTEMIC READING

A possible reply to our criticisms is that Bermúdez is not trying to describe the *psychological* process by which these second-order operations happen but rather he would be taking an *epistemic* approach, addressing the question of what would confer justification and internal epistemic warrant to our reasoning process: what justifies me in believing that the inference I draw is valid?[5] The idea here would be that inner speech is necessary for this internal justification-conferring process—what we would have to answer if asked for justification (i.e., language, sentences, *words*). Under this epistemic reading, Bermúdez could agree that psychologically inner speech is not required for intentional ascent and propositional mindreading and still maintain that explicit inner speech representation is epistemically necessary for intentional ascent, that is, needs to be invoked in any process of conferring justification to the deliberative processes leading to conclusions (and, plausibly, to attributing propositional states to others).

One should notice, however, that this interpretation is not straightforward in Bermúdez's works. In many places, he is clearly speaking about a psychological process, while in others, he only mentions epistemic notions such as 'evidence' or 'evaluation' (Bermúdez, 2018a). In the most recent

[5] We are indebted to Zoe Drayson (UC Davis) for calling the attention to this reading in the talk "Inner Speech and Thinking about Thoughts", delivered on March 14, 2023, within the Inner Speech Seminar Series organized by Daniel Gregory with the collaboration of the research project "Inner Speech in Action" (UPF), the LOGOS Research Group and the Barcelona Institute of Analytic Philosophy.

argument for intentional ascent (see Section 4 below), specifically, the epistemic interpretation doesn't seem warranted. But even if we grant this epistemic interpretation to avoid the worries presented and others, additional problems arise for this reading, as one could doubt that inner speech is required for such an epistemic process of reasoning. That is, would higher-order thinking *just* be epistemically justified when carried out in inner speech? The kind of epistemic justification at stake here has to be *internal* justification*,* for clearly one cannot defend that the validity of the deduction (something external) depends on my rehearsing in inner speech the premises and the conclusion (*pace* certain forms of *psychologism*). The problem for internal justification appears, though, for the cases of inner speech absence, as the ones presented above for reflexive evaluation and propositional mindreading (and see also cases of unsymbolized thinking or anendophasia presented below). It seems reasonable to say that subjects in these cases can be epistemically justified without relying on inner speech.

4. A dilemma for the role of inner speech in intentional ascent

The most detailed argument Bermúdez offers for his thesis that intentional ascent requires semantic ascent can be found in his 2018a article (pp. 202–203). In this Section, we will present the argument, comment on and add existing evidence against the claim that the vehicles of the intentional ascent must be either language-like or image-like (Premise 3), and focus on a key idea of the argument (Premise 4): target thoughts must be represented in a way that reveals their canonical structure (i.e., how they are built up from their constituent elements). We argue that the way Bermúdez believes the canonical structure of natural language sentences might be settled, that is, subconsciously, is in tension with the idea that expanded forms of inner speech are better suited for the job of revealing it, leading to a dilemma for the view.

Bermúdez's (2018, pp. 202–203)[6] argument runs as follows:

1. The paradigm cases of thinking about thinking are conscious mental acts that involve taking a target thought as the object of thought.
2. So, these target thoughts must be represented by consciously accessible constituents of a creature's psychological life.
3. The representational format for these consciously accessible constituents of psychological life must be either language-like or image-like.
4. Target thoughts must be represented in a way that reveals their canonical structure (i.e., how they are built up from their constituent elements).
5. Representing thoughts in a pictorial or image-like format does not reveal their canonical structure.
6. The canonical structure of a thought is revealed when it is represented in a linguistic format.
7. Thoughts can be linguistically represented either by sentences in the language of thought, or by natural language sentences.
8. Sentences in the language of thought are not consciously accessible constituents of psychological life.
9. Therefore, thoughts can only be taken as the objects of thought when they are represented by natural language sentences.

First, let us refer briefly to the possible problems posed by Premise 3: "The representational format for these consciously accessible constituents of psychological life must be either language-like or image-like." As other authors have already highlighted (Lurz, 2007), this premise would deny that in cases of unsymbolized thinking (Hurlburt and Akther, 2008), intentional ascent is possible. Unsymbolized thinking is an episode of thinking without any words or images that some people report having as an inner experience, characterized by Hurlburt and colleagues. It seems difficult to say that in those cases intentional ascent is not possible, that is, that an unsymbolized thought cannot become the object of a second-order thought. Minimally, saying 'this thought', that is, ostensibly referring to an unsymbolized thought (which is the kind of thing subjects might report in interviews with Hurlburt

[6] As mentioned above, notice that in this detailed argument there is no trace of the 'epistemic reading' present, but rather what is at stake is the characterization of the psychological process of second-order thinking and what sort of representational format is required.

and colleagues), is a second-order thought whose target thought is not linguistically articulated, and therefore its canonical structure cannot be revealed (Premise 6)[7]. Moreover, in the interviews by Hurlburt and colleagues, subjects are asked to describe the experience of the thought in detail, thus resulting in not just its apprehension but a thorough examination and reflection of the thought itself.

Analogously, cases of anendophasia (Nedergaard & Lupyan, 2023), in which subjects report experiencing no inner speech at all, would present an additional problem for premise 3. Are people with anendophasia incapable of intentional ascent? This is simply not the case. Rather, their behavioral differences are seemingly minimal (e.g., in Nedergaard & Lupyan (2023), poorer performance in rhyme judgment tasks and verbal working memory) and *not* crucial to their cognition, as Bermúdez's account would predict. Anendophasia is a phenomenon discovered only recently, and the empirical literature on its psychological implications is nascent. We would argue that the fact that this condition has remained unnoticed for so long speaks against the necessity of inner speech (insofar as it denotes a conscious, introspectable phenomenon) for any process that would translate into crucial behavioral differences, e.g., not being able to think reflexively, or the impossibility of attributing propositional states to others.

In the case of anendophasic individuals, one could argue that perhaps they could be talking out loud or writing in order to perform tasks related to intentional ascent. While it is true that private speech seems to substitute inner speech usage for anendophasics (for instance, the study of Nedergaard & Lupyan (2023) found that performance in the verbal working memory and rhyme judgment tasks decreased only in anendophasics who *did not* talk out loud while performing them), no studies have proven this compensation with regards to reflexive evaluation and propositional mindreading. And while it is possible to imagine how anendophasics could particularly benefit from uttering out loud or writing their thoughts for reflexive evaluation, the fact that they would have to do the same with the propositional states of others in order to attribute them seems far-fetched. Lastly, both in unsymbolized thinking and anendophasia cases, Bermúdez could appeal to a recharacterization of the cases as misdescriptions, illusory experiences, or as somehow involving some minimal form of inner speech, despite what subjects report. However, this comes at the cost of denying the phenomena *per se*. Accepting instead that second order thought is not possible for these subjects also seems a high cost to pay.

Now let's move to Premise 4 of the argument. It states that for intentional ascent we need a representational format that reveals the canonical structure of thought, that is, "how [thoughts] are built up from their constituents". A first point to note is that, as several authors have emphasized (Vygotsky 2012/1934; Fernyhough 2004), inner speech normally comes in a *condensed* format, that is, as fragmented words such as 'supermarket'. Such "single words" are not apt to reveal the constituents of thoughts. Indeed, Bermúdez admits that "Beckett-like subsentential utterances *are typically not useful tools* for bringing full-fledged propositional thoughts to mind" (Bermúdez 2018a, p. 205, our emphasis). Thus, there needs to be a certain inner speech profile that allows for the revelation of canonical structure, namely, *expanded* forms of inner speech (ibid.).

However, Martínez-Manrique and Vicente's (2010) have already objected that inner speech cannot encode thoughts because of its semantic indeterminacy, that is, natural language sentences do not determine the propositions by themselves, and so target thoughts cannot become the object of further thought *via* inner speech. Bermúdez (2018a) responds in detail to this objection. First, he recognizes that context must play a role, and is tempted to reject the semantic indeterminacy of inner speech on the basis of the crucial role of context in the determination of meaning, but he decides not

[7] We are also inclined to doubt Premise 5: thinking about thinking can only be done in a linguistic format (see also Munroe, 2021, for a defense of image-based reasoning). Image-like formats, such as following a pattern of visually representing different premises of an argument seem to be able to do the job. In a reasoning of the sort 'Jan is taller than Júlia', 'Júlia is taller than Mia', therefore 'Jan is taller than Mia', we might not hold in mind these sentences in inner speech but just visually represent what they express in order to evaluate their correction. We won't pursue this debate here, but see Lurz (2007), and also Bermúdez (2011, 2018b) for replies.

to pursue this strategy. In the end, he grants natural language's indeterminacy and offers a way to avoid their criticism while maintaining his theory: semantic and syntactic determination can be solved by *subconscious operations*, and what is apprehended in inner speech is the determinate content of the sentence itself. In inner speech, then, what disambiguates and fully determines its meaning are subpersonal computations, leaving it open whether indeterminacy is experienced or not at the conscious level (p. 211).

We believe that this response leaves Bermúdez's account in a problematic situation regarding the role of inner speech in presumably revealing the canonical structure of our thoughts (Premise 4). On the one hand, if content is determined subconsciously, then highly condensed inner speech (and arguably, "Beckett-like subsentential utterances") *would do equally well* in revealing the canonical structure of the thought in play. But in how Bermúdez initially sets the stage, these utterances are 'typically not useful tools for bringing full-fledged propositional thoughts to mind' (p. 205), expanded kinds being the ones suited for the job. The fact that the degree of expansion of inner speech has any influence in revealing the canonical structure becomes something hard to explain once it is assumed that syntactic/semantic ambiguity is solved subconsciously. Why would more words reveal it better? Intentional ascent would be equally feasible over "I need to go to the supermarket before it closes" than the same-meaning utterance "supermarket!". Thus, subconscious determination of content renders inner speech expansion superfluous.[8]

Here Bermúdez could argue that we are conflating 'content determination' with 'revelation of canonical structure', so that his view is in fact that while content is determined subconsciously, inner speech is required for *revealing* thought's canonical structure consciously. In this case, inner speech would still be key in making *conscious* the structure and constituents of a first-order thought, which would be something "added" to the determination of content, and which could plausibly be dependent on the properties (e.g., the expansion) of the inner speech vehicle. Bermúdez, however, gives no hint of this dissociation of the expressions 'content determination' and 'revelation of canonical structure' in his answer to Martínez-Manrique and Vicente's (2010) criticism. (If these expressions didn't conflate, Bermúdez's answer would not be an answer to their critique). In any case, we would say that we are sympathetic to the idea that inner speech is (one way of) making thought conscious in general, although in a way that departs from Bermúdez's original view of inner speech being required as stated in Premise 4 (see Section 5).

On the other hand, if one follows Bermúdez's claim that expanded inner speech utterances are better suited to do the job of revealing the canonical structure, we run into the second horn of the dilemma. Indeed, if it is *about words* that we think when we think about thoughts, then the amount of words (expansion) would seem decisive in the revelation of the canonical structure of a thought. The problem is that it is unclear how much expansion is required in order for a thought to "be represented in a way that reveals their canonical structure (i.e., how they are built up from their constituent elements)". Similar to Martínez-Manrique & Vicente's (2010) criticism of ambiguity, one could insist that even very expanded forms of inner speech might not adequately reveal a thought in the way that Bermúdez seems to require. Indeed, it was Frege's (1982) and Russell's (1905) idea (and many others after them) that natural language misleads us about the nature of the propositions we assert, and so of our thoughts. A *superficial* inner speech utterance might lead to a very different proposition once there has been revelation of its *logical form*. The logical form of propositions can be made manifest by the structure of a sentence in a formal language. This format would indeed guarantee the revelation of how a thought is built up from its constituent elements. Such formal languages, though, are not natural public languages like inner speech, for which we would need to "say" in inner speech the utterances that reflect the logical structure of propositions. This scenario would require "holding in mind" complicated sentences (e.g., for every 'x', if 'x' has the property 'y'...) and a good number of them (plausibly all the reasoning steps involved). The idea that inner speech must occur in this form is a *reductio ad absurdum* of Bermúdez's argument. It may only correspond to philosophers and logicians, and in any case, it is not the sort of inner speech profile we typically experience, even when second-

[8] And if one takes unsymbolized thought and anendophasia cases at face value, then—for the job described by Bermúdez—the role of inner speech alone would be superfluous too.

order reasoning. In fact, in analogy with cognitive operations such as counting, complex cognitive linguistic activities might normally need the support of the act of writing the sentences down on a paper, a blackboard, etc., as the embodied and extended cognition tradition has highlighted (Bruineberg & van den Herik, 2021). If sophisticated higher-order cases of thinking require extended cognition, then the operation of 'holding in mind' might not be sufficient to start with. We have acknowledged earlier, though, that Bermúdez recognizes that the language object of intentional ascent might be written. But notice that if for the most paradigmatic intentional ascent operations we need external support, then his theory might not be best described as a theory of *inner speech*. The fact that natural language sentences (in inner speech, overt speech, or written language) may be beneficial or particularly useful for intentional ascent is not what we are objecting to here. Rather, it is the claim that we would *need* to enunciate our thoughts in a (conscious) natural language (hence, typically inner speech) to think about them.

Notice that our argument resembles Martínez-Manrique and Vicente's (2010) ambiguity argument, in that the conclusion is the same—inner speech is not suitable for intentional ascent in the way required by Bermúdez—but takes another route to this conclusion: if we grant that expansion is relevant to the canonical revelation of content, then the extreme secure form in which we know that a sentence reveals its canonical structure (i.e., how it's built up from its constituent elements) is by formalizing it, thus distancing from how typically inner speech is presented in experience. But if such formalization is "said" in words internally, then the process might become too complex to be able to "hold it in mind", which raises doubts about whether inner speech is the correct *explanans*.

To sum up, we are in front of a dilemma. On the one hand, if thought content is determined subconsciously, then the role of inner speech becomes superfluous in the revelation of canonical structure (condensed and expanded forms would do equally well, and presumably forms of unsymbolized thought too). On the other hand, if expansion is decisive for revealing the canonical structure of thought, formalization (or any other sophisticated form of inner speech) would be a secure case of doing the job, but at the cost of distancing too much from how typically inner speech is experienced. In any case, an explanation is lacking on where to draw the line on the expansion needed, and the problem (and hence, the dilemma) is that, as long as the line is not drawn, inner speech seems either trivial or inaccurately described.[9]

Finally, another point to be made is that, while there might be reasons to argue for expanded and logically rich forms of inner speech for the first paradigm case, reflexive evaluation and monitoring of one's own thinking, one could doubt that the case is applicable to cases of propositional mindreading. While, following Bermúdez, both cognitive activities require metarepresentation, it seems that only the former can insist on the high standard of needing the canonical structure revealed, i.e., for further operations, like revision of evidential relations, contrasting hypotheses, and so on. For the act of consciously attributing a propositional state, however, focusing on inner speech as the format that needs to reveal the canonical structure of the attributed thought (at the cost of being always unrealistically expanded, for instance) remains unjustified.

5. Gesturing towards a less demanding and more encompassing role of inner speech

After assessing Bermúdez's theory of intentional ascent, we believe that its high standards might come with a certain "tension" with what seemed to be the project (and the letter) of the 2003 book, namely, the idea of language as mediating the *distinctiveness* of human cognition through the capacity for metarepresentation or metacognition. The uneasiness would come from noticing that what seemed to be a very pervasive and relevant phenomenon in our cognitive lives (that regarded a seemingly "looser" notion of reflexive thinking and included second-order desires) risks being a very infrequent and sophisticated psychological—if not philosophical—process, arguably only available to those logically skilled instead of the linguistically able. A perhaps more congenial picture to his own project

[9] For an alternative view according to which conscious thoughts are determined by the linguistic mechanism underlying inner speech and unsymbolized thought, see Vicente & Jorba (2019).

as stated in the 2003 book, would construe intentional ascent in a *less cognitively demanding* way, so that *then* it could be seen as more pervasive in our cognitive lives.

We believe that we can maintain the main insight of Bermúdez's views without endorsing his more (to our minds) problematic claims, and unrealistic psychological picture of intentional ascent. It seems plausible that thinking about thinking requires metarepresentation, but not necessarily *via* inner speech. We do not deny that inner speech might sometimes present an extended profile, which may do better at revealing the constituents of thought, and which one may conveniently think "about" in order to think further, but we have argued that to maintain that this is always the case is to demand too much from second-order operations, and from inner speech, which usually presents itself in a more condensed manner, or it is altogether absent, as in the empirical cases presented.

Inner speech can be, among other things, the vehicle in which certain thoughts are embedded, an operation involved in making them conscious. In this sense, we might maintain the importance of inner speech in *making thoughts conscious,* that is, in bringing thoughts to consciousness, in gaining access to our thoughts. This facilitates thought (first and second-order) in a way that creatures who don't enjoy inner speech might lack.

Bermúdez (2018a) raises the point that there is an equivocation between two different senses of 'consciously accessible' that leads to a misunderstanding of his view. The two senses are 1) a thought being consciously accessible insofar as it is conscious and 2) a thought being consciously accessible insofar as it is being consciously thought about (i.e., insofar as it is the object of a conscious thought). He warns us of the risk of conflating both senses. While he accepts that inner speech is not required for 1), inner speech is required for 2), according to him. While we agree with this conceptual distinction, we believe there is room for arguing that in both cases, inner speech can play the same role of "bringing thoughts to consciousness", that is, of making thoughts consciously accessible in the linguistic format, and, importantly, in neither case would inner speech be necessary. If inner speech is the vehicle of some thoughts, understood as the "clothing" in which some thoughts are articulated, this role is done both in 1) and in 2), and noticing this fact might allow us to see a more pervasive role of inner speech in our minds—without endorsing the problematic necessity claim of inner speech, which Bermúdez only holds for 2.

However, we do not need to commit to this being the *only way* in which thoughts come to consciousness and are thought about, as we can also think about pure contents, as in cases of unsymbolized thinking (Hulburt & Akther, 2008; see Jorba & Vicente 2014 for a defense of such a view). Yet, we can consider language as a privileged format to make our thinking processes conscious and explicit (e.g., when asked for justification, or in specially sophisticated cases), without postulating its use in the manner described by Bermúdez, nor restricting second-order abilities to infrequent and sophisticated processes that, arguably, may not be available solely by being language-using creatures. On the other hand, lowering the demands on inner speech allows one to include many other ways in which inner speech can aid cognition.

If we focus on how inner speech *gives rise* to thoughts, as it occurs in cases of first-order linguistic thinking, and consider it analogous to second-order thinking, we gain a way of rescuing the relevance of inner speech for cognition, in line with Bermúdez's argumentation in the 2003 book. The picture of the necessity of inner speech just for paradigmatically very sophisticated cases of intentional ascent risks jeopardizing Bermúdez's (right) intuition of the relevance of inner speech, and of language altogether for cognition. Perhaps this risk is not real if we drop the phrasing of "thinking *about* words" (which, we argued, is problematic). When we explore our ability (instead of our necessity) to think *with* words, words retain their benefit as a cognitive tool and their ability to bring thoughts (and thoughts for further thoughts) to the forefront, and conduct thought processes consciously. It is in this sense that Jorba & Vicente (2014, p. 95) say:

> [W]hen we focus our attention on something by means of inner speech, we become conscious, not of our own inner speech — which is already a conscious phenomenon — but of the *content* of our inner speech. That is, we become conscious, e.g. that the triangle should not be put in the upper left corner, that *p* follows from *q*, or whatever. Inner speech, by

driving our attention to contents, makes these contents conscious. And note that inner speech is used in having conscious thoughts, not in having thoughts about those thoughts.

In this picture, inner speech needs not be recruited as a format in order to engage in second-order thinking, and first-order thoughts need not undergo a linguistic transformation to be part of the process. Inner speech might come into play, but not to 'hold in mind' the premises and be the 'blackboard' for evidential relations. It might express, for instance, the end of a second-order process directly (in the SCHOOL HOLIDAY example, the person could say "Ah, she's home early"). It can also take place in "impoverished", condensed inner speech, because in this case it is mainly and directly an operation of the syntactic/semantic aspects of inner speech; a case of thinking about *thoughts*, not about *words*. In this picture, inner speech is a tool that we think *with,* not *about*. Thinking with words is yet one use among others of inner speech, and even if it brings a number of benefits, it might not be necessary for thinking about thinking, if our criticisms and others are on the right spot. If we conceive of inner speech as an *activity* of speaking, albeit silently, in analogy with outer speech (Jorba & Vicente, 2014; Martínez-Manrique & Vicente, 2015), and understand processes of thinking (from the most basic to the most sophisticated) as "piggyback riding" such activity of speaking, we might have a more handy explanation of the relevance of inner speech in our conscious and reflective behavior and cognition. Interestingly enough, this less restrained view (thinking *with* words) seems to represent more accurately the human counterpart mode of thinking implicitly stated in the title of his 2003 book, *Thinking without words.*

6. Concluding remarks

We have presented Bermúdez's view on intentional ascent and the role of inner speech in it, arguing that the way Bermúdez describes second-order thinking processes (those that require intentional ascent, hence semantic ascent, and hence, inner speech) is empirically untenable, and unrealistic when applied to real-life examples. We have also argued that requiring that the target thought be represented and apprehended in inner speech in a way that reveals its canonical structure (Premise 4 of the argument), results in a dilemma where inner speech becomes either superfluous or inaccurately described. Inner speech can be condensed, or it can be absent altogether, and second-order dynamics might still take place (see the empirical evidence above and the intuitive counterexamples). Given its high standards, Bermúdez's view risks depicting inner speech in a too sophisticated form, present in activities that may not be available to the linguistically able, but to the logically skilled, and such activities may need the aid of external support (e.g., writing), thus raising doubts about Bermúdez's view being about inner speech. The thinking processes that require intentional ascent (reflexive thinking and propositional mindreading) are prevalent, widespread, and take place in less demanding settings. Ideally, they are part of the average-human cognitive toolkit. We suggested that a way to account for this fact and to safeguard Bermúdez's role of language in cognition is to reconsider our ability to think *with* words (instead of *about* words), in a way that is more psychologically realistic and less cognitively costly for thinking about thinking to occur, and for inner speech to be involved. Language can retain the benefits and thought-enabling characteristics defended by Bermúdez, while addressing the distinctiveness of human cognition in a wider variety of cognitive processes and avoiding the necessity claim that, under scrutiny, appears problematic and/or unrealistic.

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