frontiers | Frontiers in Communication

TYPE Editorial
PUBLISHED 04 April 2023
DOI 10.3389/fcomm.2023.1160727

OPEN ACCESS

EDITED AND REVIEWED BY
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SPECIALTY SECTION
This article was submitted to Language Sciences, a section of the journal Frontiers in Communication

RECEIVED 07 February 2023
ACCEPTED 20 March 2023
PUBLISHED 04 April 2023

CITATION
Vogels J, Zeman S, Contemori C, Hendriks P, Köder F and Maier E (2023) Editorial: Perspective taking in language. *Front. Commun.* 8:1160727. doi: 10.3389/fcomm.2023.1160727

Editorial: Perspective taking in language

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KEYWORDS

perspective taking, language, cognition, theory of mind, audience design, narrative, viewpoint alignment, empathy

Editorial on the Research Topic
Perspective taking in language

1. Introduction

Each language user brings their own unique set of perceptions, knowledge and experiences to the table, which may or may not be aligned with that of other people. In communication with others, or when talking or writing about a third person, these perspectives need to be somehow coordinated. For example, when referring to an object in the world, speakers take into account whether the object and its visual context are shared between speaker and hearer in choosing a particular referring expression, such as "the big duck" in the context of a bigger and a smaller duck (Heller et al., 2008). Using their own knowledge of the situation, hearers can also understand ironic utterances such as "Great weather!" when it is pouring, and quickly draw the inference that the speaker intends to convey something considerably different from the literal meaning. Furthermore, languages offer various constructions for reporting the perspectives of others, including quotation (e.g., "Laura said: 'The weather is great!'"), attitude reports (e.g., "Laura believes that it's raining"), and more subtle stylistic means such as free indirect discourse (e.g., "Yay! She would go jump in all the puddles right now!").

In producing or interpreting these various linguistic forms, language users (speakers, hearers, writers, and readers) need to consider a perspective that is different from their own, for instance by inferring what someone else knows, believes, or feels. Research has shown that the ability to infer and reason about other people's mental states starts to develop in early childhood (early forms of perspective taking have been observed for infants at around 13–15 months of age; Onishi and Baillargeon, 2005). At the same time, even adults sometimes fail to use this ability to take into account the perspective of others. The exact preconditions for when and to what degree language users shift perspective are as yet unknown, although they should probably be sought in a combination of linguistic, cognitive, and social factors.

As already becomes clear from the examples given above, perspective taking plays a role in a variety of functions of language, from irony understanding to narrative writing. There is a rich literature surrounding each of these different types of perspective taking in language. For example, in psycholinguistic studies of conversation, perspective taking may be defined as "the ability to appropriately attend to information that is either shared, or not

shared with one's partner, depending on the context" (Brown-Schmidt and Hanna, 2011, p. 16). Studies of perspective taking in narratives, on the other hand, are concerned with how readers or hearers establish the different viewpoints of the narrator and the characters within the narrative, and take into account what they know, think, or feel (e.g., Sanders, 1994; Salem et al., 2017). Research on narrative perspective taking has also been extended to the domain of visual communication, studying phenomena like role shift in sign languages (e.g., Poulin and Miller, 1995; Lillo-Martin, 2012) and point of view shots in comics and film (e.g., Maier and Steinbach, 2022). In past years, there has been increased attention to perspective taking in both children and adults with Autism Spectrum Disorder (Overweg et al., 2018; Abbot-Smith et al., 2020; Kissine, 2021; Zimmermann et al., 2021), for whom pragmatic impairment is a core deficit, as well as in other clinical populations (e.g., ADHD: Kuijper et al., 2015; Alzheimer's Dementia: Bittner et al., 2022; schizophrenia: Van Schuppen et al., 2019). However, the mutual relationships between the different types of perspective taking are still largely unknown.

In this editorial, we explore the question whether all these different types of perspective taking are manifestations of the same underlying concept, or whether they should be seen as linguistically and/or cognitively different notions. For this, we consider the different perspectives on perspective taking in language presented in the articles in the current Research Topic and the previous literature. However, before we can review the notion of perspective taking, we first need to define what a perspective is.

2. What is a perspective?

"Perspective" (lat. *perspicere* "looking through") is a notion originating in the study of visual perception. In the visual domain, perspective can be defined as a directed relation between a perceiving subject and the perceived aspects of an object in focus, the latter being dependent on the observer's viewpoint: If the observer's or object's position is changed, the perspective changes. In recent years, "perspective" has become a frequent notion in both the linguistic and the more general-cognitive (henceforth "cognitive") literature, in which it tends to refer to various phenomena. This is also reflected in our Research Topic, whose topics range from lexical items (Eekhof et al.), pronouns (Bergqvist; Kuijper et al.), epistemic, evidential, and causal expressions (Bergqvist), and mental state verbs (Neitzel and Penke), to comprehension of irony (Köder and Falkum), communicative acts in conversation (Benz; Damen et al.; Kronmüller and Guerra; Yoon et al.), co-speech gestures (Hinterwimmer et al.), subjective adjectives (Kaiser), represented speech (Dancygier; Spronck and Casartelli; Stokke), and narratives (Harris; Van Krieken and Sanders; Wimmer et al.). The notion of perspective itself has, however, remained rather vague (as has also been stated in the overviews in e.g., Klein and von Stutterheim, 2002; Verhagen, 2007; Zeman, 2017), and the different "perspectival" phenomena seem to be more linked by family resemblance than by reference to a single well-defined concept (Linell, 2002, p. 53).

When applied to language and cognition, "perspective" is a metaphorical concept. Metaphorical mappings are characterized by the fact that some, but not all properties of the source concept are mapped onto the target concept (Lakoff and Johnson, 1980). In order to gain a better understanding of perspectivization as a linguistic notion and to look out for an overarching and more formalized understanding of what it means to "take" a perspective in all these different linguistic domains, we should therefore look for those structural properties of the source concept that can be found within the different studies. In other words, we have to ask which components of perceptual perspective are seen as relevant for linguistic perspectivization, and which properties are not mapped onto the target concept.

Reviewing the literature on cognitive and linguistic perspective, three structural properties of visual perspectivization in particular can be identified that are mapped onto the different "perspectival" phenomena (see Zeman, 2020). First, perspective implies the existence of a set of possible alternatives that allows us to "take" and "shift" a perspective. In real life, an observer is, due to their spatiotemporal position, commonly restricted to one visual viewpoint only. If one stands in front of a statue, one is able to see only its front but not its backside. A choice of perspective is thus linked to the selection of one perspective out of others. Second, perspective is commonly seen as person-bound. In its original sense, "perspective" presupposes an animate subject that is able to perceive and observe. Inanimate entities thus cannot have a perspective, unless they are anthropomorphized as conscious rational agents (like Marjory, the talking Trash Heap in *Fraggle Rock*). This is linked to a third aspect: the perspectival relation is directed at some perceptible object and the result of a cognitive process, prototypically an act of visual perception.

The general idea of these three components of perspective appears in many studies on cognitive or linguistic perspectivization. There are, however, also crucial differences between visual vs. cognitive and linguistic perspectivization, linked to the fact that in language and cognition, viewpoints are not physically located in the real, but in a mental world. As soon as we expand the concept of "perspective" in this way, the structural properties of visual perspective are understood in a more abstract sense when it comes to cognitive and linguistic perspective (see Zeman, 2017, 2020).

(i) Alternative perspectives. The primary prerequisite of cognitive perspectivization is not only the existence of alternative perspectives, but the awareness that such alternatives are available. The requirement for taking another's perspective is thus the cognitive ability to mentally decouple or suppress one's own point of view. Such mental "switches" imply an inherent hierarchy between the different viewpoints, since the original viewpoint is not necessarily canceled but can be maintained (i.e., in hypothetical scenarios like "if I were a millionaire," or when watching a movie, we do not forget our original viewpoint in real life). We are thus accustomed to holding more than one perspective at a time. When applied to language, "perspectivization" is also commonly more than taking one perspective out of a set of mutually exclusive alternatives (Zeman, 2017). Linguistic multiperspectivization has been shown, for example, for phenomena of communicative interaction like irony

(Köder and Falkum) and speech and thought representation (Dancygier; Spronck and Casartelli), but also for grammatical elements like egophoric pronouns and modal particles (Bergqvist). The interaction between multiple viewpoints in discourse has been modeled in terms of viewpoint networks by a.o., Dancygier and Vandelanotte, 2016; Van Duijn and Verhagen, 2019; Dancygier.

(ii) Person-boundedness. Perspectivization in language and cognition is often seen as "person-bound," that is, as the "introduction of a subjective point of view that restricts the validity of the presented information to a particular subject (person) in the discourse" (Sanders and Redeker, 1996, p. 293). This is most obvious in perspective taking in communicative acts (Benz; Damen et al.; Yoon et al.) and irony understanding (Köder and Falkum). In narratives, as well, perspectives are commonly ascribed to thinking and perceiving characters within a story (Van Krieken et al., 2017). Other linguistic phenomena that are prototypically described as "perspectival" are egophoric pronouns (Bergqvist) and evaluating adjectives (Kaiser), which establish a relation between the "speaker" and the denoted situation and thus presuppose a first-person agent's point of view. Perspectivization has therefore also been described as covering the "non-objective facts of language" (Verhagen, 2007). However, under such a definition, the "perspective holder" does not have to be a real person of flesh and blood. The perspectival center can also be a hypothetical or a fictional character (Stokke). Fictional narratives, for example, offer many examples of "unnatural" viewpoints of (anthropomorphized) animals and objects (Richardson, 2006; Trompenaars et al., 2018), and the status of the narrator as a "person" has been an issue of controversial debate (for an overview see Zeman, 2020). Also, viewpoints can be quite abstract, as seen in studies on perspectivization in grammar (Bergqvist; Spronck and Casartelli). In language, the concept of person-boundedness thus seems to be a scalar property that ranges from actual human beings in the real world over anthropomorphized characters to more abstract conceptions of perspectival centers.

(iii) Object in focus of the cognitive process. Linked to the observation in (ii) that the origin of perspective is not necessarily an animate person but can also be a rather abstract functional instance within the text, cognitive and linguistic perspectivization do not necessarily have to be the result of a perceptual process. Rather, the notion of perspective is extended to all kinds of mental states, such as knowledge, desires, beliefs, or emotions [for an overview see e.g., Taylor and Edwards (2021) who distinguish between visual perspective taking (VPT) vs. mental state attribution, typically referred to as theory of mind (ToM)]. As a result, cognitive and linguistic perspectivization are also not necessarily directed at a perceptible object that one is taking a perspective on. In cases of, for instance, temporal perspective, we can even ask whether perspectivization has to be directed at an object at all.

All three structural properties of perspective are shared by both the source (visual perspective) and the target (cognitive and linguistic perspective) of the perspective metaphor. As such, they appear in various approaches on linguistic perspectivization and also in several papers of our Research Topic. We therefore assume that all three structural properties are considered representative in many accounts of perspective and perspectivization in language. In the next section, we analyze what it means to take on a perspective, both cognitively and linguistically, when two or more viewpoints are considered simultaneously. That is, going beyond the mere selection of a particular perspective from a set of alternatives, which we call *perspective holding*, we focus on situations in which multiple perspectives are considered at the same time (see also Zeman, 2017). For ease of reference, we continue to refer to this more complex type of perspectivization as *perspective taking*. We take the definitions of perspective taking in the papers of the Research Topic as a starting point. However, given the emerging consensus on the concept of "perspective," we argue that our analysis in the following section determines more than just the common denominator of the articles in our volume. Rather, it seems to capture crucial structural aspects of *perspective taking* when applied to language and cognition.

3. A formalized definition of perspective taking

To systematically investigate the notion of perspective taking, we collected the various definitions of perspective taking that we found throughout the articles in this Research Topic, and broke them down into their parts. Next, we determined which parts were shared across multiple definitions. In this way, we arrived at the formulaic description in Equation (1).

$$\textit{Perspective taking} \;=\; \text{a } C \text{ of } M\text{-ing the } I \text{ of } P \qquad (1)$$

Where C is some kind of cognitive process, M is some kind of mental operation, I is some kind of information, and P is a person. In other words, the authors in this Research Topic seem to agree that, at a minimum, perspective taking should be considered a cognitive process, which involves mentally operating on some information that belongs to a person. Most definitions in this Research Topic can be written as a variant of this formula, although not all definitions include all elements. In the following, we discuss each of the elements in the formula in Equation (1) in more depth, determining where researchers diverge in the exact nature of the element. The most prevalent element of perspective taking in the definitions seems to be *P*: virtually all papers in this volume involve taking the perspective of a person. We will therefore start our discussion with this element.

3.1. *P*(erson)

Although we have seen above that the source of a perspective can be rather abstract, the types of perspective taking discussed in this Research Topic generally involve at least one other person or rational agent (aside from the one doing the perspective taking). Two separate ways in which the relationship between the original perspective of the perspective taker and the newly taken perspective

takes form in language can be clearly distinguished: (i) some linguistic choices depend on reasoning about the perspective of other speech act participants, and (ii) language can help us try on other perspectives outside of the current communicative exchange; that is, beyond the here and now. We will call the first type of perspective taking *communicative perspective reasoning* and the second type *perspective shifting*.

3.1.1. Communicative perspective reasoning

Communicative perspective reasoning applies when speakers take their hearer's knowledge or perception into account to choose the right expression (e.g., "here" vs. "there," "left" vs. "right," "the car" vs. "the big car," "the dog" vs. "a dog," etc.). Conversely, hearers also take the speaker's knowledge or perception into account to choose the right interpretation. For example, as Kronmüller and Guerra show, hearers make use of specific information about the speaker in their interpretation of referentially ambiguous terms (e.g., when the word *bat* can refer to either a baseball bat or a flying mammal). In addition, Bergqvist investigates how speakers make use of the egophoric pronouns "I," "you," and "we," modal particles, and mental verbs such as "think" to explicitly signal their own perspective as well as to take into account the perspective of their speech partner. More implicitly, the use of irony and other pragmatic implicatures also require making inferences about what the other speech act participant knows. Note that we do not commit ourselves to the position that such inferences in communicative perspective taking must be made consciously; they may also occur unconsciously. That such reasoning is acquired relatively early becomes clear in the work of Köder and Falkum, who show that 3-year-old children are already sensitive to certain features of irony. Similarly, Yoon et al. find that young children are able to infer from disfluent expressions that their speech partner must be referring to something that is unfamiliar from the speech partner's perspective.

Crucially, the above examples are all about the perspectives of the participants in a specific communicative exchange between an actual speaker and an actual hearer. However, an important question is whether communicative perspective reasoning has to involve a specific speech partner, or whether the same process is also applied in more generic perspective-taking situations (see e.g., Dell and Brown, 1991). According to Kuijper et al., taking the perspective of a (hypothetical) speech partner is also a necessary step in certain aspects of grammar, such as the correct interpretation of object pronouns as non-reflexive, and is thus independent of a specific communicative situation.

3.1.2. Perspective shifting

Perspective shifting applies in contexts beyond the speaker-hearer relationship in the here and now. Here, a language user takes a "third party" perspective, such as that of a fictional character, into account. This type of perspective taking can be cued with a grammatical construction that semantically forces the shift, but it can also be a more global pragmatic inference process. A common reporting construction that forces a perspective shift is direct discourse. As Van Duijn and Verhagen (2019, p. 213) note, direct discourse "suggests a viewpoint shift in its fullest form" (e.g., "'I am tired', said Alice"), whereas indirect discourse (e.g., "Alice said that she was tired") presents the event from a third person's point of view. Another perspective-shifting construction, often found in literary texts, is free indirect discourse, which mixes elements of direct and indirect discourse. More specifically, both tenses and pronouns are taken from the narrator's perspective (as in indirect discourse), whereas everything else comes from the character's perspective (as in direct discourse; e.g., "Ellen made a decision. Yes! She would tell him later today"; Stokke, p. 3). In his article, Stokke shows that this construction also occurs in non-fictional texts, and there serves a special function of taking the (fictionalized) perspective of an actual (historical) person, which may have cognitive benefits in taking in historical facts.

Thus, both direct discourse and free indirect discourse shift the interpretation of indexicals (e.g., "then" > "now") and other perspective-sensitive expressions away from the current communicative situation, whereas indirect discourse constructions do not affect indexicals but do provide information about someone's mental state and hence their perspective in a broader sense. The perspectival source can also remain abstract, however. Spronck and Casartelli point out that speech or attitude report constructions may be extended to include other constructions that have a "say," "think," "want," or even "cause" meaning but do not literally report someone's speech or thoughts. For example, in the West-African language Wan, a construction that would literally translate as "The water said: let me boil!" can be used to express the non-reporting meaning "The water was about to boil" (Spronck and Casartelli, p. 2). Spronck and Casartelli's typological inventory suggests that perspective shifting may be much more pervasive in grammar than is apparent at first glance.

Beyond speech and attitude report constructions, various linguistic elements may "provide access to the inner world of characters" (Eekhof et al., p. 1). These may be lexical elements such as "happy," but also elements of a more general narrative style, such as the voice in which the narrative is told (first vs. third-person narrator) or whether the narrator has access to the character's thoughts and feelings (internal vs. external focalization; Wimmer et al.).

Perspective shifts may even be established in the absence of explicit markers, in a more pragmatic fashion. Harris notes that "speakers and hearers are finely attuned to perspectives and viewpoints that are not their own, even though perspectival information is not encoded directly in the morphosyntax of languages like English" (p. 1). When we read or listen to a story, we can get transported away from the here and now, to the story world (or, in the case of non-fiction, a different time and place in the actual world), identifying or empathizing with a protagonist and hence considering or taking on their perspective in some sense. Harris explores the contextual cues that can invoke or retain a certain perspective during language processing in the absence of explicit reporting constructions. Kaiser undertakes a similar investigation, focusing on the processing of subjective adjectives. That contextual cues for perspective shifting are not limited to the spoken or written modality is shown by Hinterwimmer et al., whose experimental results suggest that perspective information can also be independently encoded in co-speech gestures.

As noted earlier, another aspect of perspective taking that is less explored in this Research Topic but is worth mentioning here is that language users can also take *their own* perspective in a situation other than the here and now. For example, speakers can talk about a past event (temporal displacement) or a hypothetical or imaginary situation ("if I were a millionaire"), representing their own thoughts or feelings in that situation (cf., e.g., Overweg et al., 2018; Zeman, 2020). These examples show that the presence of another person or mind is actually not a necessary condition for perspective taking (but perhaps only a different mind*set*).

3.1.3. Unifying perspective taking types

Several authors in this Research Topic attempt to unify the different types of perspective taking outlined above in a single model. Dancygier connects the grammatically induced perspective shift in direct discourse constructions to the pragmatic concept of deixis. Similarly, Van Krieken and Sanders make a connection between narrative perspective shifting on the one hand and communicative perspective reasoning on the other. In their framework of narrative perspective taking, they propose that both written and oral narratives revolve around the dynamic alignment of different viewpoints: those of the speaker/narrator, of the hearer/reader, and of the narrative characters. A similar model is put forward by Van Duijn and Verhagen (2019), who propose that perspective taking can take place along several axes: speakers/narrators coordinate with their addressees about some shared object of conceptualization, and together narrator and addressee may also be coordinating with a third party, not included in their communicative situation. This third party itself can also have a stance toward the object of conceptualization and further parties, thus allowing for a recursive series of perspective taking.

3.2. *I*(nformation)

According to the definition in (1), perspective taking not only requires another person or rational agent (*P*), but also certain information (*I*) that this person or agent has access to. Perspective taking seldom involves a complete identification with, or transportation into, the mind of this other person. In most cases, the perspective is restricted to one type of information. Based on the articles in this volume, we may distinguish at least three types of information that can serve as a basis for perspective taking: (i) factual knowledge; (ii) subjective attitudes; and (iii) goals and intentions.

3.2.1. Factual knowledge

Language use has been characterized as a joint activity, in which speaker and hearer work together to get to the intended meaning of a speech act (Clark, 1996). In this view, speaker and hearer take into account the knowledge that they both share, the common ground (e.g., shared knowledge about the world, about the current situation, or about each other), to work out the optimal form or meaning, respectively. Building on this background, both Benz and Bergqvist provide a theoretical analysis of how such epistemic perspective taking by speech-act partners takes form in language. Using an experimental paradigm, Kronmüller and Guerra provide evidence about when and how this type of perspective taking takes place during real-time language processing in adults. Furthermore, Yoon et al. provide evidence that children as young as 4 years old can already distinguish between different partners' knowledge states, and use this information in language comprehension.

3.2.2. Subjective attitudes

Besides assessing what factual knowledge another person has, perspective taking may also involve ascertaining another person's more subjective attitudes. People might not be inclined to do this overtly: Damen et al. asked participants to estimate a conversation partner's emotion toward or opinion about various matters, and found that they were unlikely to ask the other person, even when this was explicitly presented as a recommended option. However, perspective taking may be a necessity when it comes to comprehending subjectively colored linguistic expressions, such as "tasty." After all, as Kaiser shows, one needs to know *for whom* something is tasty to fully grasp the meaning of the adjective. Following the results of Kaiser's study on the modality-specificity of such attributions, it appears that perspective taking has a top-down, context-sensitive impact on semantics.

3.2.3. Goals and intentions

Rather than merely estimating what another person knows, believes or feels, perspective taking often has the additional aim of understanding the other person's intentions. In conversation, for example, the hearer needs to work out what the speaker intended to say from what was actually said. This fact forms the basis of the field of Gricean pragmatics (e.g., Grice, 1975; Horn, 1984; Levinson, 2000). That the speaker's intentions may not always coincide with what was literally said is especially clear in the case of irony, where speakers may occasionally even say the opposite of what they intend to say. The cognitive underpinnings of working out the speaker's intention are explored by Köder and Falkum and Kuijper et al.

Goals and intentions may also be important for narrative comprehension: to be able to transport yourself into the story world and identify yourself with the narrative characters, it helps to understand what moves and motivates these characters. However, based on the results of their experiments, Wimmer et al. place doubts on a central role for perspective taking in identification and transportation in narratives.

3.3. *M*(ental operation)

Having established different types of information that may be associated with someone else's perspective, we now enter the more cognitive side of perspective taking, and ask what kind of mental operation (*M*) must be executed on the perspectival information to be able to call it perspective *taking*. At the minimum, the perspectival information needs to be represented somewhere in the mind of the speaker, hearer, or reader. For example, the first step in the acquisition of a theory of mind (ToM) is that the child needs to learn to represent other people's beliefs as distinct from their own beliefs (e.g., Perner, 1991; see also Yoon et al.). However,

there is discussion about whether representing another person's beliefs (knowledge, attitudes) is sufficient for perspective taking (see Deschrijver and Palmer, 2020 for an alternative proposal in terms of relations rather than representations). In their model of narrative perspective taking, Van Krieken and Sanders (see also Dancygier) propose that taking someone's perspective involves a *mental alignment* of viewpoints. This suggests that in addition to representing another person's perspective, perspectives also need to be aligned; that is, one's own perspective needs to be adjusted to match the other. If this theory is true, it raises the question how far this alignment needs to go: to what extent do you really need to step into someone else's shoes to take their perspective? Does the original perspective get lost in the process, or is it still available? For example, does perspective taking require that you empathize with another person (recognize their mindset or feelings; Van Krieken et al., 2017; Neitzel and Penke), or do you also need to identify with them (*adopt* their mindset or feelings; Van Krieken et al., 2017; Wimmer et al.)?

3.4. *C*(ognitive process)

While some authors in this Research Topic treat perspective taking purely as a linguistic property, triggered by certain linguistic elements, and part of the semantic denotation or pragmatic understanding of a sentence, ultimately perspective taking needs to take place in the mind of the language user, and hence be a cognitive process (*C*). It is as yet unclear what kind of cognitive process perspective taking in language entails, and it has been framed, for instance, as an important part of social cognition (Eekhof et al.) as well as a fully grammaticalized process in specific cases (Kuijper et al.). Over the past couple of decades, there has been a fierce debate over the question whether perspective taking in conversation should be considered an early automatic process or a late high-level reasoning or monitoring process (see, e.g., Keysar et al., 2000; Hanna et al., 2003; Brown-Schmidt and Hanna, 2011). Kronmüller and Guerra unite these two views by showing that it could be both: they argue that perspective taking involves an automatic cue-driven memory process as well as a higher-level inferential mechanism. Similarly, Kuijper et al. suggest that perspective taking can be an automatized grammatical process, but also an effortful pragmatic process, depending on the situational variability. An important question is whether this division can also be applied to other types of perspective taking, such as narrative perspective shifts.

4. Discussion and outlook

In this Editorial, we started out with the question whether the different types of perspective taking are fundamentally different processes, or whether they have a common base. We subsequently inventoried some definitions of perspective taking in language, and came to an overarching characterization, repeated as Equation (2), consisting of four critical elements: a person (or rational agent; *P*), information associated with that person (*I*), and a mental operation (*M*), which is part of a more general cognitive process (*C*).

$$\textit{Perspective taking} \;=\; \text{a } C \text{ of } M\text{-ing the } I \text{ of } P. \qquad (2)$$

This characterization may help us to break down boundaries between disciplines focusing on a specific type of perspective taking, from perspective taking in conversation to narrative perspective shifting, and from visual to cognitive and emotional perspective taking. In turn, this crossing of boundaries may shed light on the question whether and how the various types of perspective taking are related. Future research should clarify the exact nature of the four elements outlined above, thereby preferably bridging the different types of perspective taking. Whether this will result in a common base of perspective taking remains to be seen, but at the very least, the plurality of uses and definitions of the term "perspective" available in linguistics, literary studies, cognitive science, and psychology shows that there is a real need for researchers to be more consistent in how they use the term.

We would like to open the discussion by positing a number of questions arising from our inventory that require further investigation:

(i) How specific does the person or rational agent whose perspective is taken need to be? Does it have to be an actual person (addressee, narrative character), or can it be more abstract (hypothetical, grammaticalized)?
(ii) In taking someone's perspective, is it sufficient to merely represent the other person's beliefs, knowledge, or attitudes? Or do you also need to identify with someone to be able to take their perspective? If so, what happens to the original perspective?
(iii) What are the cognitive mechanisms (e.g., executive function, theory of mind) underlying different types of perspective taking in language? For example, to what degree do different types of perspective taking involve automatic cue-driven memory processes and to what degree are they higher-level inferential mechanisms?
(iv) How can we find suitable ways to operationalize perspective taking in experimental research, for instance via measures of visual attention (eye gaze), cognitive effort (e.g., pupil dilation, reaction time, processing speed) or behavioral responses?
(v) To what extent can perspective taking be considered an integral part of semantics or pragmatics, and to what extent should we consider it as a more general socio-cognitive ability that influences language production and comprehension, but is not part of language itself?

To be able to get a firm grasp of the notion of perspective taking, future research on perspective taking should try to find an answer to these questions. To aid in this endeavor we hope here to have clarified the relevant theoretical distinctions and terminology.

Author contributions

JV and SZ contributed equally to the writing of this editorial. CC, PH, FK, and EM provided detailed feedback to a first draft of the text and are listed in alphabetical order. All authors contributed to the article and approved the submitted version.

Funding

This research was supported by the Netherlands Organisation for Scientific Research (NWO), under Grant 275-89-0360 to JV, and 276-80-004 (FICTION) to EM.

Acknowledgments

We thank all authors of the articles in this Research Topic for their contributions. We are also grateful to all participants of the workshop on Perspective Taking in Language (PeTaL), held on June 23–24, 2021 at the CLCG, University of Groningen, where most of the articles of this Research Topic have been presented and discussed.

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