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A mixed-quotational account of indirect discourse: Evidence from self-pointing gestures*

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Abstract This paper argues that *indirect discourse* is a form of *mixed quotation*. It further posits that self-pointing gestures in indirect discourse, when aligned with a third-person pronoun co-referent with the matrix subject, constitute a *character viewpoint gesture* quoted from the matrix subject (cf. Ebert & Hinterwimmer 2022). To formally model this, Davidson's (2015) demonstrational account of quotation is combined with Ebert & Ebert's (2014) approach to gesture semantics. This analysis also readily explains observations that certain indexicals can shift in indirect discourse (Plank 1986; Anderson 2019), by reinterpreting them as quotations from the matrix subject.

Keywords: indirect discourse, mixed quotation, demonstrations, pointing gestures

1 Introduction

When speakers report someone else's thoughts or feelings, they have several ways to do so, one of which is indirect discourse (ID). Traditionally, ID is regarded as non-quotational, meaning that speakers convey someone else's thoughts or speech without directly quoting them. This contrasts with direct discourse (DD), where the reported speaker's words are presented verbatim. In this paper, I challenge the traditional view that ID is non-quotational, proposing instead that it can be understood as a form of mixed quotation. Additionally, I adopt the view that quotation involves demonstration (Clark & Gerrig 1990). I argue that self-pointing gestures in ID, when aligned with third-person pronouns referring to the reported speaker (i.e., the matrix subject), should be analyzed as character viewpoint gestures (McNeill 1992) quoted from the reported speaker.

To formally model this proposal, I integrate Davidson's (2015) account of quotation with Ebert & Ebert's (2014) approach to gesture semantics (cf. also Ebert &

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Hinterwimmer 2022). Davidson's framework treats quotations as demonstrations—performative acts that can include not only verbal elements but also gestures, prosodic modulations, and even non-linguistic behavior (Clark & Gerrig 1990). Ebert & Ebert (2014) observe that co-speech gestures behave similar to appositives and thus analyze them as conventional implicatures (Potts 2005), meaning that they make not-at-issue contributions by default.

The central claim of this paper is that mixed quotation in ID can account for the complex behavior of some perspective-dependent expressions as well as self-pointing gestures. In DD, all perspective-dependent expressions shift to reflect the reported speaker's viewpoint. In ID, however, only certain expressions, like evaluative expressions, shift, while others, such as pronouns, do not (at least not in German, English, and many other languages). Free indirect discourse (FID) further complicates this picture by blending characteristics of both DD and ID. Building on Maier's (2015) analysis of FID as a form of mixed quotation, I argue that a similar approach can be applied to ID, particularly in the interpretation of gestures.

The results of a recent experimental study by Ebert & Hinterwimmer (2022) somewhat surprisingly suggest that in ID, self-pointing gestures aligned with a third-person pronoun that refers to the matrix subject are acceptable, indicating that a perspective shift toward the reported speaker takes place. This finding suggests that the perspective-shifting strategy observed in FID and DD is also at work in ID, challenging the traditional view of ID as purely non-quotational.

The remainder of the paper is structured as follows: Section 2 provides an overview of speech reports and the role of quotation in DD, ID, and FID. Section 3 outlines the formal semantic account of gesture interpretation as proposed by Ebert & Ebert (2014). Section 4 discusses the integration of Davidson's (2015) demonstrational approach with the gesture semantics framework as proposed by Ebert & Hinterwimmer (2022). Section 5 presents the formal analysis of ID as mixed quotation, highlighting the challenges and potential future research directions. Finally, I conclude by suggesting how this analysis could be extended to other types of speech reports and related phenomena, such as the interpretation of face emoji in ID.

2 Speech reports and quotation

2.1 Speech reports

Perspective plays a decisive role in the interpretation of natural language expressions. There are many different types of lexical expressions that have to be interpreted from a certain perspective. Among them are relational expressions (e.g., *this*, *that*, *left*, *right*), evaluative expressions (e.g., *fantastic*), epithets (e.g., *that idiot*), predicates of

personal taste (e.g., *(be) tasty*), and epistemic modals (e.g., *must*). They are by default interpreted from the perspective of the speaker (Harris 2012). However, in certain contexts they can also receive a so-called shifted interpretation—an interpretation that is not dependent on the speaker's perspective, but on the perspective of some other individual in the current discourse. Systematic exceptions to this general speaker-oriented interpretation are speech reports. Examples are given in (1) (taken from Hinterwimmer 2017: 284).

(1) On her way home, Mary heard a song by Kendrick Lamar that she liked on the radio.

a. She thought: "I will buy his new album tomorrow."

b. She thought that she would buy his new album on the following day.

c. She would buy his new album tomorrow.

The utterance in (1a) is an instance of what is called *direct discourse* (DD). In DD, all perspective-dependent expressions shift toward the reported speaker. This means that the first-person pronoun *I* in (1a) is interpreted as referring to Mary, the individual whose thought is being reported, rather than the current speaker. Additionally, tense marking, as well as local and temporal deictic expressions such as *tomorrow* in (1a), are not interpreted in the context where the DD utterance is rendered, but in the context where the thought took place. In other words, *tomorrow* refers not to the day following the thought report, but to the day after the thinking event occurred.

The behavior of perspective-dependent expressions in (1b) and (1c) is less straightforward than in DD. In (1b), an instance of indirect discourse (ID), only certain perspective-dependent expressions shift their interpretation toward the reported speaker's perspective, such as predicates of personal taste and evaluative expressions. In contrast, deictic expressions are typically interpreted from the reporting speaker's perspective. However, this is sometimes a matter of preference, while in other cases, a shifted interpretation is impossible. For example, personal pronouns in German and English generally cannot shift toward the reported speaker. On the other hand, temporal and local deictic expressions can shift if the reported speaker's perspective is made prominent (Plank 1986; Anderson 2019).

This difference becomes apparent when comparing (1b) with the DD alternative in (1a): to refer to the reported speaker in ID, a third-person pronoun must be used. Additionally, *tomorrow* in (1a) is replaced with *on the following day* in (1b). This shift has generally been attributed to expressions like *I* and *tomorrow* being so-called *indexicals* (Kaplan 1989), meaning that they derive their semantic value directly from the context. In other words, unlike regular expressions, the referent of an indexical changes depending on the context. For example, the indexical *here* always refers to the location where the utterance is made.

Unlike DD, ID is typically analyzed as non-quotational, meaning that an ID utterance is a free report of what someone else said or thought, without quoting their exact words.

Finally, the utterance in (1c) is an instance of free indirect discourse (FID). FID is a way to report another speaker's thoughts or utterances without any overt marking, as shown in the example. It can be seen as a blend of DD and ID because there, all perspective-dependent expressions shift toward the reported speaker—thus patterning with DD—the only exceptions being pronouns and tense markings (e.g., Schlenker 2004; Maier 2015). In the latter respect, FID and ID behave alike.

There are different analyses for FID: the most popular group of analyses are so-called double context analyses (e.g., Schlenker 2004; Sharvit 2008; Eckardt 2014). A second approach to FID is the one made by Maier (2015) analyzing it as an instance of mixed quotation where the whole FID utterance is quoted except pronouns and tense markings. In the following, I will briefly discuss the approaches by Schlenker (2004) and Maier (2015).

Schlenker (2004) proposes that every utterance is interpreted relative to two distinct contexts: a context of thought and a context of utterance. In everyday communication, these two contexts typically coincide, as speakers generally express thoughts they are having at the time of the utterance. However, in FID, these contexts diverge: the time of the thought being expressed in FID precedes the time at which the thought occurred. Schlenker (2004) posits that it is lexically determined for indexicals relative to which context they are interpreted. Pronouns and tenses are interpreted relative to the context of utterance and, as a result, cannot receive a shifted interpretation from the reported speaker's perspective in FID. In contrast, all other indexicals are interpreted with respect to the context of thought, which explains why they shift toward the reported speaker in FID. He attributes this divide within the class of indexicals to pronouns and tense markings denoting variables, whereas other indexicals do not. In contrast to other indexicals, pronouns and tense marking thus carry features—such as tense, gender, or person—that restrict their domain of reference.

Maier (2015) criticizes Schlenker's (2004) approach and, more generally, all double-context analyses of FID, as not covering some empirical patterns—among them the use of non-standard dialect that is attributed to the reported speaker (cf. the FID utterance in italics in (2))—adequately or at least not without stipulation.

(2) He [Big Boy] remembered the day when Buck, jealous of his winning, had tried to smash his kiln. *Yeah, that ol sonofabitch! Naw, Lawd! [. . .] Cussin the dead! Yeah, po ol Buckwuz dead now. N Lester too. Yeah itwuz awright fer Buck t smash his kiln. Sho. N he wished he hadnt socked ol Buck so hard tha day*.

(Maier 2015: 349)

Instead of assuming that two different contexts are at play, he claims that FID is a highly specialized and conventionalized form of mixed quotation where everything is quoted except pronouns and tense markings. The mechanism accounting for unquotation is mediated pragmatically (cf. also Maier 2017). An instance of mixed quotation outside of FID is given below.

(3) Romney said that Newt Gingrich is an "influence peddler."

(Maier 2015: 362)

Mixed quotation is defined as the simultaneous use and mention of a phrase through the use of quotation marks. The use component implies that, when the quotation marks are disregarded, the underlying report can be paraphrased to retrieve the original proposition expressed. The quotation marks introduce a second layer—the mention component. This layer indicates that the content within the quotation marks is a verbatim excerpt from the original utterance being reported.

Transferring the concept of mixed quotation to FID, the mention component can straightforwardly account for the use of non-standard dialect and shifted indexicals: these elements are simply quoted constituents from the reported speaker. In contrast, the use component explains the transparency concerning constituent structure: a quoted VP, for instance, is always used as a VP. The unquotation of pronouns and tense markings, as discussed by Maier (2015), is attributed to the general pragmatic bias against verbatim quotations of these elements outside direct discourse. He proposes a two-dimensional system where the use component introduces a property variable. The mention component regulates that the reported speaker used the quoted constituent to refer to the property introduced by the use component. Crucially, in his system only the use component enters compositional derivation.

2.2 Quotation as demonstration

In research on quotation, there has been a shift from viewing it as solely a written phenomenon to recognizing it as a spoken phenomenon as well. This shift has led to new and interesting insights. For instance, spoken quotations have been shown to be demonstrational (Clark & Gerrig 1990), meaning they are a type of performance. Quotations, therefore, can incorporate not only words but also speech-accompanying gestures or, in a stricter sense, even non-linguistic behavior. The core idea behind quotation as demonstration is that it is depictive rather than descriptive. As such, quotations are essentially instances of iconicity, where there is a non-arbitrary resemblance between the form of the quoted element and the original speech event.

(4) And so she said "[whispering] What are we going to do?"

(Clark & Gerrig 1990: 775)

Here, the person quoting someone also adapts their manner of speaking to convey that the original utterance was delivered in a whispering voice. This aspect of *delivery*, as described by Clark & Gerrig (1990), clearly illustrates the iconic mapping between the original and reported speech event.

Davidson (2015) proposes a formal account of quotation that captures the aforementioned observation that quotation involves a demonstration, i.e., some kind of performance. As the main source of evidence, she uses so-called *be like*-constructions and later extends this proposal to capture role shift phenomena in sign languages.

(5) John was like "I'm soooooo hungry."[1]

In this example, not only the words are quoted, but also the prosody, that is the lengthening of *so*, marked by replicating the letter *o* multiple times. However, as Davidson herself notes, it is hard to distinguish a demonstration from a verbatim report in written language. However, this becomes easier in spoken language as a demonstration can also involve, for example, co-speech gestures (cf. also Ebert & Hinterwimmer 2022). This will be elaborated in Section 4 of the present paper.

Another way to illustrate the demonstration present in *be like*-constructions and thus quotation more generally is that it seems that even non-linguistic behavior can be quoted:

(6) My cat was like "feed me!"

(Davidson 2015: 485)

The quote embedded under *be like* in (6) does not quote a linguistic form. Rather, since cats cannot speak, the quote refers to the behavior of the cat, which the speaker then translates into a linguistic signal. This shows that, under a demonstrational approach to quotation, quotation extends not only beyond words but even beyond language itself.

To formalize this, Davidson (2015) introduces a demonstrational type, *d*, into the semantic ontology—a more flexible variant of the sentence type *S* proposed by Potts (2007). This flexibility is needed to account for phenomena that extend beyond the words themselves, such as lengthening as in (5) or quotations of non-linguistic behavior (6). She defines a *demonstration-of* predicate taking an event and a demonstration as its arguments. This predicate lexicalizes as *like* in English, according to Davidson (2015) (cf. also Landman & Morzycki 2003 for an analysis

1 Note that the quotation marks are normally omitted. They are just included here to emphasize that *be like*-constructions embed quoted constituents.

of expressions similar to English *like* in German and Polish). A demonstration is defined as follows:

(7) A demonstration d is a *demonstration of e* (i.e., *demonstration(d, e)* holds) if d reproduces properties of e and those properties are relevant in the context of speech
$[\![\text{like}]\!] = \lambda d \lambda e.\text{demonstration(d, e)}$

(Davidson 2015: 487)

Beside words, properties of a speech event that can be relevant in a speech context include (but are not limited to) intonation, gestures, or sentiment. In Davidson's account, the quoted constituent embedded under *be like* is simply formalized as a demonstration. Thus, for (5) this means:

(8) $[\![\text{“I'm soooooo hungry.”}]\!] = d_1$

The demonstration d_1, then, is a particular demonstration consisting of three words and intonation (as indicated by the letter replication in *soooooo*) and potentially also gestures, etc. Davidson's (2015) analysis is embedded into a Neo-Davidsonian event semantics, resulting in the following formal structure of (5) after existential closure (Heim 1982):

(9) $[\![\text{John was like “I'm soooooo hungry.”}]\!] =$
$\exists e.[\text{agent(e, john)} \wedge \text{demonstration}(d_1, \text{e})]$

In Davidson's approach, a *be like*-construction, and more generally all quotations, trigger a demonstration. This demonstration resembles the original speech event in contextually relevant ways, modeled by the two-place *demonstration* predicate in her framework. The verbatim condition required in some quotative constructions is derived somewhat unconventionally in Davidson's (2015) account, through a blend of lexical semantics and pragmatics. Sentences like *John said, "I'm hungry."* are analyzed similarly to *be like*-constructions, with one key difference: the lexical semantics of *say* introduces a predicate, *say(e)*, that takes an event as its argument. This, in turn, pragmatically specifies that the relevant properties of the demonstration are words, meaning that the words used in the original saying event must also be part of the demonstration, thereby enforcing the verbatim requirement.

3 Gesture semantics

Gestures are communicative movements of the hands, arms, and also the whole body that may include facial expressions which convey emotions, thoughts, and actions. While there is a long-standing tradition of gesture research within psychology,

cognitive linguistics, and semiotics (Kendon 1980; McNeill 1992; Kita & Özyürek 2003; Fricke 2007, 2012; Müller, Cienki, Fricke, Ladewig, McNeill & Teßendorf 2013), research on the meaning contribution of speech-accompanying gestures has entered formal semantics only very recently. There are two main accounts of gesture semantics which agree that gestures contribute not-at-issue meaning (Potts 2005) by default: the cosuppositional approach by Schlenker (2018) and the supplemental approach as proposed by Ebert & Ebert (2014) (see Ebert 2024 for a recent comparison of the approaches). While both accounts agree in many respects, they differ in how they interpret the inferences triggered by co-speech gestures—gestures that occur alongside speech. Schlenker (2018) argues that these gestures trigger a special type of presupposition, called a cosupposition, which requires that if the speech content p holds, then the gestural content g must also hold. In contrast, Ebert & Ebert (2014) analyze these gestures as conventional implicatures in the sense of Potts (2005). In the latter account, they are therefore conceived as closely resembling the semantic behavior of appositives. In what follows, I will only discuss the supplemental account as it makes very concrete predictions about the semantic behavior of pointing gestures, which are of main interest in this article.

Before sketching the formal details of Ebert & Ebert (2014) in more detail, I would like to highlight that gestures add meaning to an utterance (e.g., McNeill 1992; Kendon 2004). Consider a case with an iconic gesture first, i.e., a gesture that resembles the entity it denotes in certain respects:

(10) My living room has <u>a window</u>. + ROUND[2]

In this example, the iconic gesture ROUND provides information about the entity denoted by the accompanying speech signal—in this case, that the window is round. While it is plausible to assume that the meaning of iconic gestures is elementary and given (cf. Ebert 2024), their full interpretation requires consideration of the co-occurring speech signal (McNeill 1992; Kopp, Tepper & Cassell 2004). This is commonly referred to as the constructional meaning of a gesture. Furthermore, unlike words or signs, iconic gestures are not conventionalized, meaning that there are many different ways to perform an iconic gesture conveying the shape of the window in (10).

Of prime interest for researchers has been the at-issue status of iconic gestures, or, more generally, iconic enrichments in general (Ebert & Ebert 2014; Tieu, Pasternak, Schlenker & Chemla 2018; Ebert, Ebert & Hörnig 2020; Barnes, Ebert, Hörnig & Stender 2022; Walter 2024a). Ebert et al. (2020) have experimentally validated the claim that iconic co-speech gestures contribute not-at-issue meaning by default, meaning that they cannot be directly denied in discourse (cf. (11)) and that they project through negation and other semantic operators, which is shown in (13).

2 Small caps indicate a gesture, underlining indicates gesture-speech alignment.

(11) A: My living room has a window. + ROUND
B_1: #That's not true! It is actually rectangular.
B_2: Hey, wait a minute! The window is actually of rectangular shape.

The observation that the response of B_1 is infelicitous accounts for co-speech gestures not being directly deniable. Instead, a discourse-interrupting element such as *Hey, wait a minute!* has to be used (von Fintel 2004, based on Shanon 1976). Alternatively, one can target not-at-issue content by using an adversative continuation following an assent or dissent (diagnostic #1c in Tonhauser 2012) as illustrated by (12).

(12) B_3: Yes, but the window isn't round.

(13) I did not bring a bottle of water to the talk. #A small one is enough for me. + LARGE

(Ebert & Ebert 2014)

In this example, the continuation is infelicitous as the gesture's contribution is not targeted by the negation. Note that if one were to give the information provided by the gesture in (13) by means of the adjective *big*, however, the continuation would be fine.

Finally, the meaning contribution of a co-speech gesture—as other not-at-issue content—can be disregarded in ellipsis constructions:

(14) A: I brought a bottle of water to the talk. + LARGE
B: I did, too. But I only brought a small one.

Here, B in their response to A first ignores the gesture A produced in their utterance as they only later add that they brought a small instead of a big bottle.

As noted earlier already, Ebert & Ebert (2014) propose that co-speech and pointing gestures behave on a par with appositives. They ground this proposal on the behavior of co-speech gestures illustrated in (11)–(14). To formalize this, they adapt the unidimensional, dynamic system proposed by AnderBois, Brasoveanu & Henderson (2015). They keep track of the aforementioned at-issue/not-at-issue divide between speech and co-speech gesture by introducing the propositional variables p and p^*, respectively, into their formal apparatus. In addition, they claim that different alignments of gesture and speech bring about different interpretations of a gesture: while aligning it with an NP results in an exemplification reading, aligning it with an indefinite DP yields a comparison reading (Ebert, Pirillo & Walter 2022). Aligning it with a definite DP, by contrast, results in an identity reading, i.e., the gestural and the verbal referent need to be identical.

In their account, both iconic and pointing gestures refer to an individual: the gesture referent g. For iconic gestures, this individual is abstract, and it must at

least carry the features crucial for comparison (Umbach & Gust 2014) that are contextually specified. The only thing setting pointing gestures apart from iconic gestures in their system is that they directly refer to the individual which is pointed at. Deferred reference (Nunberg 1993) is also possible, however. This means that the referent pointed at and the actual referent need not be identical. For example, one can point to a picture of someone to refer to the person in the picture.

Ebert & Ebert (2014) introduce discourse variables such as *x*, *y*, and *z*, which represent individual concepts and are thus of type <s, e>. These variables are introduced by a dynamic existential quantifier [·]. The variables *p* and *p**, used to model the distinction between at-issue and not-at-issue content, differ in how they inform the common ground: while *p* introduces a proposal to update the common ground, *p** imposes its content directly. Consequently, not-at-issue content enters the common ground immediately. This approach is grounded in models of at-issueness that distinguish between the two meaning dimensions based on their discourse behavior (e.g., Farkas & Bruce 2010; see Koev 2018 for an overview of different notions of at-issueness). This accounts for the observation that not-at-issue content cannot be directly denied, as it immediately integrates into the common ground. Finally, the gesture referent *g* denotes a rigid designator R_g that returns the same value—that is, *g* itself—in all $w \in W$. This is translated into their system in (15).

(15) $[z] \wedge z = R_g$, where for all $w \in W$: $[\![R_g(w)]\!] = g$

A sentence as in (16a) where the gesture is aligned with an indefinite DP is analyzed as in (16b):

(16) a. My garden has a pool. + RECTANGULAR

b. $[x] \wedge x = \text{my\_garden} \wedge [y] \wedge y = \text{pool}_p(y) \wedge [z] \wedge z = R_g \wedge \text{SIM}_{p*}(y, z) \wedge \text{pool}_{p*}(z) \wedge \text{has}_p(x, y)$

In the formula, an individual concept *x* is first introduced which is assigned the value of the speaker's garden. Next, another individual concept *y* is introduced, which is ascribed the at-issue property of being a pool. Third, an additional individual concept *z* is introduced, assigned the value of the rigid designator R_g denoted by the gesture referent *g*. This individual concept *z* must be similar in contextually relevant aspects to the individual concept *y*, i.e., a pool. This similarity is modeled by a not-at-issue similarity predicate SIM_{p*} (cf. Umbach & Gust 2014). Finally, the verb *has* makes the at-issue proposal that *x* has *y*. The contributions in both the at-issue and not-at-issue dimensions can thus be summarized as in (17).

(17) **at-issue:** The speaker's garden has a pool.
not-at-issue: The gesture referent is similar to this pool and is itself a pool.

Aligning the gesture only with the NP would yield the same formula, the only difference being that the similarity predicate would be missing. Alignment with the definite article, by contrast, would also result in a similar formula. There, however, the similarity predicate would be replaced by a not-at-issue identity statement between the verbal and the gesture concept. Recall that the alignment of a pointing gesture with the indefinite DP in (16a) would yield the same formalization as Ebert & Ebert (2014) assume the same underlying semantics for iconic and pointing gestures. In the next section, I will summarize the proposal by Ebert & Hinterwimmer (2022) that combines the demonstrational account to quotation (Davidson 2015) with the supplemental analysis of co-speech gestures sketched in this section.

4 Combining a demonstrational account to quotation with gesture semantics

Ebert & Hinterwimmer (2022) extend the account of Ebert & Ebert (2014) to quotational environments by combining it with Davidson's (2015) account of quotation. As will be shown below, this comes with the additional advantage that this extension can now also capture gestures aligned with, for example, a verb, as the original supplemental account strongly focused on speech-accompanying gestures in the NP domain.

Ebert & Hinterwimmer (2022) describe an observation not discussed in Davidson (2015) that is concerned with at-issue/not-at-issue distinctions. While the *be like*-construction in (18a) can be targeted with a sentence as in (19a) but not with (19b), their intuition is that the reverse pattern holds when turning the *be like*-construction into an ordinary report in direct discourse as in (18b).

(18) a. Bob was like "This isn't fair." + WHINEY VOICE
b. Bob said: "This isn't fair." + WHINEY VOICE

(Ebert & Hinterwimmer 2022: 336)

(19) a. No, I think he wasn't whining when he said it wasn't fair.
b. Yes, ok, he said that. But I don't think he was whining when he said it wasn't fair.

(Ebert & Hinterwimmer 2022: 336)

Their intuitions suggest that the at-issue status of demonstrations can differ—in *be like*-constructions, they appear to be at-issue, thus accounting for the observation that they are directly deniable. Conversely, they are not-at-issue in ordinary direct speech reports, illustrated by the observation that they can only be targeted there by using an affirmative continuation following an assent (cf. Tonhauser 2012).

In a similar vein, Davidson (2015) also noted that gestures can be embedded under *be like*:

(20) Bob was like GOBBLING.[3]

(Davidson 2015: 489)

Here, the GOBBLING gesture also seems to make an at-issue contribution. This, however, might relate to the more general observation that pro-speech gestures in general contribute at-issue meaning (e.g., Ebert 2017). Intuitively, this still holds when a co-speech gesture occurs as a demonstration in a *be like*-construction (Davidson 2015). Ebert & Hinterwimmer (2022) attribute the at-issue contribution of demonstrations in *be like*-constructions to the demonstrative *like*. According to them, it functions as a dimension shifter that shifts not-at-issue content toward the at-issue dimension. This has been attested for the German demonstrative *so* ('such/like this'), as well (Ebert & Ebert 2014; Ebert et al. 2020).

To integrate the supplemental approach to gesture semantics with Davidson's (2015) demonstrational approach to quotation, Ebert & Hinterwimmer (2022) embed the latter into the former. However, they diverge from Davidson (2015) in how the demonstration is triggered. While Davidson (2015) assumes that the requirement for a demonstration with *like* and reporting verbs (e.g., *say*) is hardwired into their lexical semantics, Ebert & Hinterwimmer (2022) propose that the demonstration emerges from the interaction between gesture and speech. Specifically, they argue that when expressions of type <s, t>—i.e., assertional sentences and clauses—combine speech with a gesture, or alternatively, a prosodic modulation as in (18a), this interaction yields an interpretation in which the reported event and the event demonstrated by the gesture must be similar. This, in essence, aligns with Davidson's (2015) definition of a demonstration. In the case of a direct speech report where no demonstrative is involved (cf. (18b)), this demonstration is not-at-issue. However, when it is embedded within a *be like*-construction (or the German alternative *und er so* 'and he is like,' cf. Streeck 2002), and thus a demonstrative is present, the demonstration shifts toward the at-issue dimension. This results in the following formalizations:

(21) a. (18a): $[e] \wedge \text{agent}(e, \text{bob}) \wedge [z] \wedge z = R_g \wedge \text{SIM}_p(e, z)$
where R_g is the individual concept that stands for *g* of uttering *This isn't fair* in a whiney voice

b. (18b): $[e] \wedge \text{agent}(e, \text{bob}) \wedge \text{say}(e) \wedge \text{form}_p(e) =$ "This isn't fair" $\wedge [z] \wedge z = R_g \wedge \text{SIM}_{p*}(e, z)$

c. (20): $[e] \wedge \text{agent}(e, \text{bob}) \wedge [z] \wedge z = R_{g'} \wedge \text{SIM}_p(e, z)$
where $R_{g'}$ is the individual concept that stands for the gobbling gesture *g'*

3 Small caps in a sentence indicate the performance of a pro-speech gesture, a gesture that replaces speech.

(Ebert & Hinterwimmer 2022: 340)

A comparison between (21a) and (21c) shows that the two formulas are equivalent, with the only difference being the gestural acts *g* and *g'*. Thus, under *be like*, gestures and prosodic modulations behave similarly in their account. The formalization of (18b), as stated in (21b), also closely resembles Davidson's (2015) proposal for direct speech reports: it introduces an event where Bob is the agent, and the event was a saying of the form *This isn't fair*. Additionally, the gestural act of uttering the sentence in a whiny voice is captured by introducing an individual concept *g* into the formalism. An advantage of Ebert & Hinterwimmer's (2022) proposal compared to that of Davidson (2015) is that it also models the at-issue/not-at-issue divide by utilizing the propositional variables *p* and *p** again (cf. Ebert & Ebert 2014).

In order to provide empirical evidence in favor of their account and also the mixed-quotational account for FID proposed by Maier (2015), Ebert & Hinterwimmer (2022) conducted an experimental rating study where participants had to rate videotaped utterances. Each item started with an opening statement followed by a speech report rendered in either FID (22a), ID (22b), or DD (22c). In each speech report, a focalized pronoun occurred (first-person pronoun in DD, third-person pronoun in ID and FID) that was co-referential with the reported speaker. This pronoun was aligned with a self-pointing gesture—a pointing gesture toward the speaker's chest. A sample item is given in (22).

(22) Leona war stinksauer.
'Leona was extremely annoyed.'

a. **FID:** Jetzt hatte schon wieder SIE die Rechnung für die gesamte Gruppe übernommen. + SELF-POINTING
'Again, SHE had paid the bill for the entire group.'

b. **ID:** Sie ärgerte sich, dass schon wieder SIE die Rechnung für die gesamte Gruppe übernommen hatte. + SELF-POINTING
'She was angry that SHE had paid the bill for the entire group again.'

c. **DD:** Verärgert dachte sie sich: "Jetzt habe schon wieder ICH die Rechnung für die gesamte Gruppe übernommen. + SELF-POINTING
'Angrily, she thought: "Now, I have paid the bill for the entire group again."'

(Ebert & Hinterwimmer 2022: 345)

Crucially, they argue that if their proposal, as well as Maier's (2015), is on the right track, then self-pointing should be acceptable in FID as a perspective shift toward the reported speaker takes place. Consequently, the gesture would be interpreted as a character viewpoint gesture (CVG)—a gesture encoding an internal, first-person perspective—quoted from the reported speaker. The same strategy should

be available in DD utterances since they are full quotes from the reported speaker. Thus, they hypothesize that self-pointing should be even more acceptable in DD compared to FID, as FID is only a partial quote. They included ID utterances as a control condition in their study. Since ID is generally assumed to be non-quotational, the perspective-shifting strategy described for DD and FID should not be available. Therefore, an interpretation of self-pointing as a quoted CVG from the reported speaker's perspective should also be unavailable. They thus hypothesized lower ratings for ID compared to both FID and DD.

Their results were partially in line with their hypotheses. They obtained very good ratings for self-pointing in FID, although these ratings were not as high as those for the DD condition. Thus, the results support their proposal as well as the one made by Maier (2015), which suggests that FID is an instance of mixed quotation. However, somewhat surprisingly for Ebert & Hinterwimmer (2022), self-pointing was rated unexpectedly well in the ID condition. An ANOVA comparing the FID and ID conditions showed that the rating difference was significant only in the F1, but not in the F2 analysis. Therefore, it cannot be concluded from their findings that ID is rated significantly worse than FID. This suggests that the same perspective-taking strategy Ebert & Hinterwimmer (2022) hypothesized for DD and FID is available in ID as well, indicating that mixed quotation is also at play in ID. In the next section, a formal analysis treating ID as an instance of mixed quotation that involves a demonstration will be proposed.

5 Proposal: Indirect discourse as mixed quotation

As mentioned at the end of the last section, I follow Ebert & Hinterwimmer (2022) and propose that mixed quotation is not only available in FID but also in ID. This quotational component is demonstrational in the sense of Clark & Gerrig (1990) and will be formalized in a similar manner as has been proposed by Davidson (2015). However, before fleshing out the proposal, I would like to discuss some additional data. The results of a rating study (Walter 2024c) corroborate the hypothesis that a perspective-shifting strategy is available in ID that is similar to the one proposed for FID by Ebert & Hinterwimmer (2022). However, I hypothesized that the main difference between FID and ID is that this strategy is only available if the perspective of the reported speaker is made prominent at the speech level, in line with data points from certain indexicals that can shift in ID under these circumstances (Plank 1986; Anderson 2019), as well. To test this, I constructed experimental items that either highlighted the matrix subject's (= reported speaker's) perspective or the reporting speaker's perspective. An example is given in (23).

(23) a. **Reported speaker's perspective:** Pia ging es erbärmlich. Sie fragte sich, warum ihre beste Freundin Anna, diese gottverdammte Saufziege, gestern

Abend mal wieder ihr zu viel Wein nachgeschüttet hat, obwohl sie doch so wenig verträgt. + SELF-POINTING
'Pia was feeling miserable. She wondered why her best friend Anna, that damned lush, had poured her too much wine again last night, even though she couldn't handle it.'

b. **Reporting speaker's perspective:** Pia ging es erbärmlich. Sie fragte sich, warum ihre beste Freundin Anna, die aber eigentlich nur die letzte Pfütze aus der Weinflasche loswerden wollte, gestern Abend mal wieder ihr zu viel Wein nachgeschüttet hat, obwohl sie doch so wenig verträgt. + SELF-POINTING
'Pia was feeling miserable. She wondered why her best friend Anna, who was just trying to get rid of the last drops in the wine bottle, had poured her too much wine again last night, even though she couldn't handle it.'

The condition highlighting the reported speaker's perspective (cf. (23a)) always did so by introducing an attitude toward another individual, where the only plausible interpretation is that this attitude belongs to the reported speaker (*diese gottverdammte Saufziege* 'that damned lush' in (23a)). Highlighting the reporting speaker's perspective was achieved by providing information that the reported speaker most likely did not have access to at the time the speaking or thinking event took place. In (23b), this information was that Anna only wanted to get rid of the last drops in the wine bottle and not cause Pia to have a hangover the next day.

Participants had to rate the items for acceptability. The results went beyond the original hypothesis. The ratings showed no significant difference between the two conditions in (23). I concluded from this that the perspective-shifting strategy hypothesized for ID is available regardless of the perspective prominent in the speech signal.

Moreover, it seems to be possible in ID utterances to include other demonstrational acts beside co-speech gestures. Intuitively, the ID alternative of (18b) given in (24) is perfectly acceptable:

(24) Bob said that this wasn't fair. + WHINEY VOICE

Thus, also demonstrations in the sense of prosodic modulations are available, providing further evidence in favor of treating ID as involving a demonstrational act and thus being quotational.

Finally, consider (25) where the indexical *tomorrow* receives a shifted interpretation, i.e., an interpretation from the perspective of the reported speaker.

(25) Kevin is angry because Kate said that she would water his plants tomorrow.

(Anderson 2019: 42)

In a rating study, Anderson (2019) found that a shifted interpretation of *tomorrow* is possible in the following scenario: Imagine Kate made a promise to Kevin two days ago to water his plants the next day as he was going on a short trip. When he returns home, he notices that Kate did not water the plants. Speakers judged it possible to interpret *tomorrow* as referring to the day following the day Kate made her promise. This shifted interpretation of *tomorrow* can also be captured in an approach to ID that involves mixed quotation, as *tomorrow* can then be interpreted as a quoted constituent from the reported speaker.

It has been shown now that there are several phenomena in ID that can, in principle, be analyzed as instances of quotation. However, in the following I will still largely focus on analyzing self-pointing gestures as instances of demonstrational acts and hence instances of quotation as they are the main focus of the present paper.

I assume that an ID utterance contributes meaning in two dimensions: it makes a descriptive contribution that is at-issue, roughly that there exists a speech event that is being reported. However, it also makes a depictive—and thus demonstrational—not-at-issue contribution that the demonstration of the speech event is similar to the original speech event. Self-pointing, I claim, is part of the demonstration and interpreted as a CVG quoted from the reported speaker (cf. Ebert & Hinterwimmer 2022). To illustrate the at-issue/not-at-issue divide, consider the next example:

(26) A: Peter complained that he again had to pay the bill for the whole group. + SELF-POINTING

$B_{1/2}$: Yes, true, but he didn't say it like that/didn't point to himself.

$B_{3/4}$: #Yes, true, but he didn't complain/it wasn't Peter who said that.

Recall that only not-at-issue content is felicitous in an adversative continuation following an assent or a dissent (Tonhauser 2012). Although highly marked, it is possible to imagine a scenario where responses B_1 and B_2 are acceptable (e.g., in a theater class). The responses B_3 and B_4, by contrast, are completely infelicitous, thus suggesting that these are the at-issue parts of an ID utterance.

For the formal account, I extend Davidson's (2015) analysis of sign language role shift and spoken language quotations to ID, as it already incorporates the idea that quotations are underlyingly demonstrational. To keep track of the at-issue/not-at-issue divide, I introduce the propositional variables p and p^* into the system (cf. Ebert & Ebert 2014). Moreover, to account for the assumption that similarity between the original speech event and the demonstration used to report that speech event must hold, I make use of the similarity predicate as proposed by Ebert & Ebert (2014).

Specifically, for a sentence as in (26) I propose the lexical entry in (27a) for a verb of saying (such as *complain*) which is—following Davidson (2015)—grounded in Neo-Davidsonian event semantics.

(27) a. $[\![\text{complain}]\!] =$
$\lambda p \lambda d \lambda x \lambda e.[\text{complain}_p(\text{e}) \wedge \text{agent}_p(\text{e, x}) \wedge \text{theme}_p(\text{e, p}) \wedge \text{SIM}_{p*}(\text{e, d})]$

b. "HE again had to pay the bill for the whole group + SELF-POINTING" = d_1
a demonstration consisting of 11 words and a self-pointing gesture (and potentially prosodic modulations)

The lexical entry for *complain* thus takes a proposition p, a demonstration d, an individual x, and an event e as its arguments such that e is an at-issue complaining event, x is the agent and p the theme of e (both at-issue), and e and the demonstration d of that speech event are similar in contextually determined aspects, which is not-at-issue. The embedded proposition in combination with the self-pointing gesture are simply formalized as the demonstration d_1. After λ-conversion and existential closure (Heim 1982), this results in the following formula:

(28) $\exists e.[\text{complain}_p(\text{e}) \wedge \text{agent}_p(\text{e, peter}) \wedge \text{theme}_p(\text{e, } [\![\text{I again had to pay for the whole group + SELF-POINTING}]\!]) \wedge \text{SIM}_{p*}(\text{e, } d_1)]$

Crucially, the similarity between the speech event e and the demonstration of this speech event d accounts for the quotational component of ID. What remains open is which elements can be quoted in ID. For example, personal pronouns—in English, German, and other languages—cannot receive a shifted interpretation and should, therefore, be excluded from the lexical material that can be quoted in this account. An investigation into which elements can be quoted in ID is left for future research.

6 Outlook and conclusion

In this paper, I proposed a formal analysis of ID, treating it as an instance of mixed quotation involving a demonstration in the sense of Clark & Gerrig (1990) and Davidson (2015). After first having given an overview of speech reports and quotation in the beginning of Section 2, the formal semantic account treating FID as an instance of mixed quotation (Maier 2015) as well as the analysis of quotation as demonstration as proposed by Davidson (2015) were briefly summarized. Section 3 sketched the formal semantic account treating speech-accompanying iconic and pointing gestures as supplements (Ebert & Ebert 2014). Then, in Section 4 the unification of Ebert & Ebert (2014) and Davidson (2015) was discussed as proposed by Ebert & Hinterwimmer (2022). Moreover, the findings of an experimental rating study by Ebert & Hinterwimmer (2022) were reported, with the surprising finding that ID seems to allow for an interpretation of a self-pointing gesture as CVG quoted from the reported speaker. This led to the proposal made in Section 5 postulating that ID involves a demonstrational act that—following Davidson (2015)—is analyzed as a quotation.

As briefly mentioned at the end of Section 5, a current drawback of this analysis is that the quotation is mediated solely by a similarity predicate, which states that the original speech event and the demonstration of that event—essentially a partial quotation—are currently unrestricted. In extreme cases, this could lead to situations where there is no verbatim quotation at all or where every word of the demonstration is quoted. The former scenario is less problematic, as recent accounts have moved away from the strict verbatim condition of quotation (e.g., Davidson 2015). Indeed, as discussed earlier, under a demonstrational account of quotation, even non-linguistic behavior can be quoted, at least in *be like*-constructions (Clark & Gerrig 1990; Streeck 2002; Davidson 2015). The latter scenario, however, presents more significant challenges to the analysis proposed in this article, as there is compelling evidence against ID utterances being direct quotes. For instance, in many languages, including German and English, first-person pronouns in ID cannot receive a shifted interpretation. The current account does not prevent a first-person pronoun from being quoted in ID, which indicates a need for refinement. Future research should aim to determine which elements in ID can be quoted and subsequently constrain the quotation mechanism. For now, (un)quotation is modulated entirely by pragmatics, as in Maier's (2015) mixed-quotational account of FID. A major advantage of the analysis proposed here, however, is that it can account for the shifting behavior of some indexicals and the interpretation of speech-accompanying gestures in ID without resorting to monsters (see Maier 2016 for a critical discussion of monstrous analyses of speech reports).

I would like to conclude by highlighting some exciting avenues for future research. The first relates to the use of (face) emoji. Face emoji have generally been argued to be anchored to the author by default, meaning they typically do not receive shifted interpretations (Grosz, Greenberg, De Leon & Kaiser 2023, but see Kaiser & Grosz 2021). However, experimental evidence suggests that face emoji can shift in ID if the perspective of the reported speaker is prominent at the speech level (Walter 2024b). Therefore, the analysis proposed here could be extended to face emoji, treating their shifted interpretations in ID as demonstrations—quotations of the reported speaker's facial expressions, or, put more abstractly, their mental state at the time of the thinking or speaking event. Another promising research direction is extending the account of ID proposed here to other types of speech reports, such as FID and DD. For DD, this extension should be relatively straightforward, as the demonstrational account proposed by Davidson (2015), on which the present work builds, already accommodates DD utterances.

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