

Subjectivity, perception and convention in ideophones and iconicity

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This paper extends the analysis of subjectivity in Japanese ideophones given by Kawahara (2020) to German ideophones and in doing so proposes an alternative analysis of this subjectivity. Whereas Kawahara (2020) argues that the subjectivity in ideophones arises due to their indeterminate and varying meaning, this analysis instead proposes that ideophones are subjective due to their iconicity and that iconicity itself is inherently subjective due to individuals' differing perceptions of how iconic forms map to real-world referents. In this approach, the subjectivity in ideophones is modelled using the judge index introduced by Lasersohn (2005), alongside a perceptual operator derived from the epistemic alternatives used in the analysis of epistemic modals given by Stephenson (2007). Specifically, the perceptual operator provides a set of worlds, which are compatible with the judge's perception in a given world and at a given time, and in which the iconic relation holds. This iconic meaning component of the ideophone is furthermore separated from its conventionalised meaning component, with the latter contributing meaning in the same manner as arbitrary items in the same grammatical category. For example, the conventionalised meaning component of an adverbial ideophone functions as a modifier of events. This separation of meaning components is shown to provide a partial explanation for the varying at-issue status in ideophones as discussed in Barnes et al. (2022). The final section of the paper also demonstrates how this analysis of subjectivity in iconicity can be applied to further examples of iconicity in spoken language such as iconic enrichments in quotations and vocal gestures.

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1. Introduction

Ideophones, such as the English *splish-splash* or *whoosh* are depictive words that stand in an iconic relation to their real world referents; they create an image of what they reference. In contrast, arbitrary equivalents such as *moving while wet* or *moving quickly and producing a noise similar to wind moving past*, which are not only inelegant in comparison, must also be interpreted according to a conventionalised linguistic system. Ideophones have long been considered a minor exception to arbitrariness in spoken language, and crosslinguistic research into them has been predominantly focused on their sound symbolism and typology, with little consideration given to their semantics. A significant exception is Kawahara (2020), who noted the similarities between ideophones in Japanese and predicates of personal taste (PPTs) such as *tasty* or *fun*, arguing that ideophones too, are subjective. Similarly, studies on lexical iconicity in sign language, such as Sehyr & Emmorey (2019) and Occhino et al. (2017), have noted the subjective nature of iconicity in general and argued that this is due to the subjective nature of perception, both of the external world and of iconicity in language.¹

¹ As highlighted by a reviewer, the studies conducted by Sehyr & Emmorey (2019) and Occhino et al. (2017) cannot be directly compared to ideophones as they focused on the iconicity of standardised lexical items in sign languages. A better comparison for ideophones in sign languages would be classifier predicates and action role shift (see footnote in §3.1 for further discussion of this). Nevertheless, the observations on the subjective nature of perception and iconicity in general made by Sehyr & Emmorey (2019) and Occhino et al. (2017) can arguably be extended to a wide range of iconic phenomena in sign and spoken languages, including ideophones.

In this paper, I extend the observations made by Kawahara (2020) to German adverbial ideophones, which also appear to be subjective. In doing so, I will present an alternative analysis, which directly incorporates the role of individuals' perceptions of iconicity in this subjectivity and can therefore be easily expanded to other iconic phenomena in language. I propose to do this by introducing a judge index alongside the world and time indices, per Lasersohn (2005) and a perceptual operator adapted from Stephenson (2007). The perceptual operator then determines a set of worlds compatible with the judge's perception in a given world at a given time. The iconic relation between an ideophone and its real world referent then holds in all worlds given by the perceptual operator. This subjective, iconic component of the ideophone will also be separated from the ideophone's conventionalised meaning, which will have important implications for the at-issue status of ideophones. This analysis also builds upon the experimental work on the at-issue status of ideophones in German conducted by Barnes et al. (2022) and provides a formal semantics that can account for their observations.

The paper will be structured as follows; Section 2 will first provide the necessary background on the semantics of subjectivity before continuing to discuss how subjectivity manifests in ideophones. The section will conclude by outlining the analysis of subjectivity in ideophones given by Kawahara (2020) and highlighting why I believe my alternative approach is preferable. Section 3 will provide an initial analysis, which models the iconic relation between an ideophone and an event and accounts for the subjectivity of this relation. Section 4 will then refine this analysis by accounting for the conventionalised meaning contributions of ideophones and will furthermore highlight how the overall analysis can go some way towards explaining the varying at-issue status of ideophones. Section 5 presents an initial attempt to extend this analysis to iconic phenomena in spoken quotation and vocal gestures. Section 6 concludes the paper.

2. Subjectivity and iconicity

This section provides the necessary background on subjectivity and ideophones for the analysis presented in this paper. The first part will discuss subjectivity and semantic approaches to it, with particular focus on Lasersohn (2005), whose approach to subjectivity this paper will adopt. The following subsections will discuss the role of subjectivity in ideophones and iconicity in general, before outlining the previous account for subjectivity in ideophones given by Kawahara (2020) and discussing the motivations behind the alternative analysis presented in this paper.

2.1 Subjectivity

Subjective predicates or PPTs, such as *fun* or *tasty* are said to refer to matters of taste or evaluation as opposed to matters of fact. Lasersohn (2005) argues that two opposing views on a particular PPT result in a contradiction, but no objective facts can decide the matter. An example is given in (1).

- (1) a. *John: Rollercoasters are fun!*
b. *Mary: No, rollercoasters are not fun.*

Intuitively, as John and Mary are both drawing upon their own individual, internal evaluations of whether rollercoasters are fun, they can both be correct within the same semantic model,

despite the fact that their assertions are apparently contradictory. This faultless disagreement is one of the key properties of subjective predicates; denial or contradiction of such predicates results in contradictory assertions by two speakers, but where neither of them can be said to be incorrect. Contrast this with (2), where the objective predicate *wooden* is used. Here it would be possible to independently verify what material the rollercoaster is made of, meaning that either Mary or John's assertion would be false.

- (2) a. *John: This rollercoaster is wooden.*
b. *Mary: No, this rollercoaster is not wooden.*

A second property of subjective predicates is that they can be embedded under subjective attitude verbs, such as *find*, whereas objective predicates such as *wooden* cannot be.

- (3) a. *I find this rollercoaster fun!*
b. *#I find this rollercoaster wooden!*

Finally, subjective predicates are said to give rise to an acquaintance inference or the inference that the speaker has direct experience of whatever they are evaluating. For example, the assertion in (4) appears odd when the speaker also asserts that they have never ridden a rollercoaster.

- (4) *Rollercoasters are fun. #I have never been on one, but I can tell from looking at them.*

However, this is not always the case. If we take (5) to be a speaker talking to their cat, Mittens, then there is no reason to assume that the speaker has actually tasted the cat food, but rather they are inferring from their cat's behaviour that the food must taste good to them. This can generally be accounted for by arguing that whoever's taste is relevant for the given subjective predicate has direct experience of what they are evaluating. In the case of (5) then, the assertion would be acceptable as long as Mittens has actually tasted the cat food.

- (5) *That new cat food is very tasty – isn't it, Mittens?*
(adapted from Stephenson 2007)

There have traditionally been two major approaches to modelling the semantics of subjectivity; the contextualist and the relativist. Contextualist approaches argue that the character of a subjective predicate is fixed, whereas its content and extension are dependent on a judge, namely the individual whose taste is relevant (cf. Glanzberg 2007; Stojanovic 2007). Faultlessness in (1) then arises due to the fact that the property that John claims to hold for rollercoasters in (1-a) is different to the one that Mary claims to hold for rollercoasters in (1-b), i.e. fun for John vs. fun for Mary. However, this approach does not account for why Mary's assertion still seems to contradict John's. Relativist approaches instead argue that both the character and content of a subjective predicate are fixed, but the extension is dependent on a judge. There is much discussion over which approach better captures subjectivity, however I will not enter into this debate here, but instead choose to adopt the relativist approach to PPTs outlined in Lasersohn (2005).

In Lasersohn's account the judge is introduced as an individual index, which gives an individual whose personal taste is relevant and functions alongside the world and time indices

to provide different extensions in different situations. As such, the truth values of PPTs are relativised to individuals, as can be seen in the semantic entry for *fun* given in (6).

(6) $\llbracket \textit{fun} \rrbracket^{w,t,i,c} = \lambda x. x \text{ is fun for } j \text{ in } w \text{ at } t.$

This analysis then accounts for how both John and Mary can utter true propositions within the same world and at the same time in (1), as the truth values are relativised to each of them. It also accounts for the apparent contradiction in their assertions, as *fun* has the same content in both utterances.

Kennedy (2013), has, however, noted that there are two forms of subjectivity. Not only are evaluative gradable predicates such as *fun* subjective, but vague, dimensional predicates such as *tall* or *rich* can also be. He gives the example in (7), where assuming that both speakers are using the same comparison class, Beatrice's contradiction of Anna's assertion is faultless. For example, take a situation where the speakers are comparing Carla's height, which is 5 foot 10, to those of the rest of their colleagues. While Anna may consider anyone over 5 foot 8 tall, Beatrice only considers people over 6 foot tall. Here, neither speaker is incorrect as they are both using different standards for tall and as such both statements are correct according to their individual standards.

(7) a. *Anna: Carla is tall!*
b. *Beatrice: No, she is not!*

However, unlike evaluative predicates, vague dimensional predicates appear odd or degraded when embedded under SAVs, as can be seen in (8).

(8) *?? I find Carla tall!*

Kennedy (2013) argues that these two types of subjectivity are based on uncertainty. Whereas the subjectivity in predicates such as *tasty* and *fun* comes from uncertainty around how individuals weigh and apply differing dimensions of evaluation, the parameters of which cannot be stipulated in discourse, vague dimensional predicates are subjective because there is uncertainty around the standard of comparison, as we saw in (7). Hence contradicting predicates such as *tall* results in faultless disagreement when the predicate occurs in the positive form, but not in the comparative, as the standard of comparison is explicitly given in comparatives. This can be seen in (9), where it would be possible to verify the truth of either Anna or Beatrice's assertion by measuring who is taller out of Carla and David.

(9) a. *Anna: Carla is taller than David!*
b. *Beatrice: No, she is not!*

Accordingly, Kennedy (2013) argues that only evaluative predicates involve a judge argument, whereas vague dimensional predicates depend on the pragmatic resolution of uncertainties in discourse. This paper will focus predominantly on evaluative subjectivity, as this appears to be the main source of subjective meaning in ideophones. However, there is arguably also an element of dimensional subjectivity in ideophones, as their conventionalised meanings appear somewhat underspecified and uncertain. This will be discussed in more detail in Section 4.

Having now outlined the most important background on subjectivity, the following section will provide a brief introduction to ideophones before moving on to discuss how subjectivity manifests in them.

2.2 Subjectivity in ideophones

Ideophones have been argued to be a universal or a near universal feature of human language (cf. Diffloth 1972; Kilian 2001; both as per Dingemanse 2012). However, some languages are recognised as being much more rich in ideophones than others. Japanese, Quichua and the Bantu languages of South Africa are considered examples of prototypical ideophonic languages, although recent research has discussed the presence of ideophones in languages such as German, which have traditionally been considered very ideophone impoverished (cf. Barnes et al. 2022; Ćwiek 2022).

The most widely recognised definition of ideophones is given by Dingemanse (2019: 16), who proposes to classify them as “an open lexical class of marked words that depict sensory imagery”. The following offers a more detailed explanation of each part of this definition:

- OPEN LEXICAL CLASS: ideophones in languages such as Japanese form a large class comparable to other open lexical classes. New ideophones can be added through processes such as ideophonisation and ideophone creation, however the ideophones within this class do not necessarily belong to a single syntactic class.
- MARKED: ideophones are marked with respect to the morphophonology of the languages in which they occur.
- WORDS: ideophones are conventionalised items, which can be listed and whose meanings can be specified.
- DEPICT: ideophones do not describe, but rather depict (cf. Clark & Gerrig 1990). Dingemanse (2013) illustrates this difference with an example from Ewe, a Kwa language spoken in Ghana and Togo. The ideophone *tyádityadi* roughly means “to be walking with a limp”. The English translation describes an event of walking with a limp using a system of arbitrary signs which must be interpreted according to a conventionalised system. In contrast, the utterance of *tyádityadi* illustrates the event through a combination of speech rate, loudness, phonation type and even gesture. This is where the iconic nature of ideophones comes into play.
- SENSORY IMAGERY: ideophones are dependent on “perceptual knowledge that derives from the sensory perception of the environment and the body” (Dingemanse 2012: 655).

Previous research into ideophones has predominantly focused on their sound symbolism and typology, with few semantic analyses of the phenomenon. Notable exceptions include Henderson (2016), who has provided an analysis of ideophones in Tseltal that draws upon the approach to quotation by Davidson (2015) (to be discussed in detail in §3.1), whereas Barnes et al. (2022) experimentally investigated the at-issue status of adverbial ideophones in German, arguing that they are default not at-issue, whilst also making predictions about the at-issue status of ideophones in other syntactic constructions and crosslinguistically. Less formally, many researchers have discussed the pragmatics of ideophones, such as Nuckolls (1992), who has argued that ideophones simulate the reported situation in such a manner that the listener is encouraged to project themselves into the simulation and become involved in the narrative.

Others have also discussed the link between the use of an ideophone and direct experience with the event the ideophone describes. Tolskaya (2011) argues, for example, that

the use of an ideophone is only appropriate for reporting events that the speaker themselves has directly witnessed. Dingemanse (2011) provides a less stringent criteria for the experience of speakers when he discusses how ideophones index the epistemic authority of the speaker, in a similar manner to reported speech. He argues that in Siwu, ideophones can only be contradicted if the speaker doing the contradicting has equal access to the sensory experience that the ideophone reports.

These observations seem to resemble the acquaintance inference discussed for subjective predicates in §2.1. This was also noted for Japanese ideophones by Kawahara (2020: 3), who argues that similarly to PPTs, “an assertion or denial of [...] ideophones implies direct experiences by a speaker” and gives the example in (10) to show that a speaker cannot use *karikari* to describe the crispiness of a pie that they have not tasted.

- (10) *Kono pai-wa karikari da. # Tabeta koto nai kedo mitame-de wakarū.*
 this pie-TOP IDEO COP ate thing NEG but look-from know
 ‘This pie is karikari (crispy). I have never tried it, but I can tell from how it looks.’
 (Kawahara 2020: 3)

Kawahara (2020) notes further similarities between Japanese ideophones and subjective predicates such as *tasty*. For example, when the Japanese ideophone *karikari* ‘crispy’ is contradicted in (11-b), it results in faultless disagreement. Crucially though, the speaker in (11-b) is not contradicting the fact that the pie is crispy, rather they are contradicting the iconic representation of this crispiness through *karikari*.

- (11) a. *Kono pai-wa karikari da.*
 this pie-TOP IDEO COP
 ‘This pie is karikari (crispy).’ (Kawahara 2020: 2)
 b. *Iya, karikari dewa nai. (Sakusaku-da.)*
 no IDEO COP NEG IDEO-COP
 ‘No, this pie is not karikari (crispy). (It is sakusaku (crispy).)’ (Kawahara 2020: 2)

This also appears to be the case for ideophones in German. Contradicting an adverbial ideophone in German also results in faultless disagreement, as in (12).

- (12) a. *Peter geht die Treppe holterdipolter runter.*
 Peter goes the stairs IDEO down
 ‘Peter is going helter-skelter down the stairs.’
 b. *Naja, er geht die Treppe nicht holterdipolter herunter. Er geht sie eher rumpeldipumpel runter.*
 well he goes the stairs not IDEO down he goes them rather
 IDEO down
 ‘Well, he’s not really going helter-skelter down the stairs. He’s going down more head over heels.’

As in (11), the contradiction does not so much concern the conventionalised meaning of the ideophone, in this case that some sort of loud, chaotic movement occurred, but rather the iconic

component of the ideophone. The speaker in (12-b) believes that *rumpeldipumpel* better maps to the event of Peter running loudly down the stairs than *holterdipolter* does.

Kawahara (2020) also highlights that ideophones in Japanese can be used with the structure *tukuduku omou*, which is roughly equivalent to the SAV *find*.

- (13) a. *Kono pai-wa karikari da to tukuduku omou.*
 this pie-TOP IDEO COP COMP utterly think
 ‘I (intently) find this pie *karikari*.’ (Kawahara 2020: 3)
- b. *Kono pai-wa eikokusei da to (??tukuduku) omou.*
 this pie-TOP English COP COMP utterly think
 ‘??I (intently) find this pie English.’ (Kawahara 2020: 3)

German ideophones can also be embedded under SAVs, such as *finden*.

- (14) *Ich finde, Peter ist die Treppe holterdipolter runtergelaufen.*
 I find Peter is the stairs IDEO run down
 ‘I found that Peter ran helter-skelter down the stairs.’ (Cécile Meier, p.c.)

It seems that ideophones in general contain a subjective component, which is related to their iconic properties. The faultless disagreement in ideophones appears to result from subjective interpretations of an ideophone’s iconic mapping. The question then is, how to account for the subjective nature of ideophones. Kawahara (2020) proposes an analysis for this based on the counterstance contingency approach proposed by Kennedy & Willer (2016). In the following section I will outline this analysis before discussing what I believe to be the limitations of this approach and providing motivation for my alternative account of subjectivity in ideophones.

2.3 Kawahara (2020)

As previously stated, Kawahara’s analysis is based on the approach to SAVs developed by Kennedy & Willer (2016). Kennedy & Willer (2016) argue that subjective predicates differ from objective ones due to the pragmatic distinction speakers made between objective facts and arbitrary matters of linguistic practice. Formally, this is accounted for by a function fixed by the context set, which generates a set of counterstances for an information state contained in the context set. These counterstances are a set of worlds which are the same as the worlds in the information state in all respects, except that they vary with respect to “contextually salient decisions about how to resolve indeterminacy of meaning” (Kennedy & Willer 2016: 921). A proposition is then said to be counterstance contingent, or subjective, if it is true in all worlds contained within the information state *s*, but not true in at least one of *s*’s counterstances. For example, when a speaker utters the sentence in (15-a) given the context that Lee eats fish, but not meat, then the function will generate a set of counterstances and in each counterstance the fact that Lee eats fish, but not meat will remain constant, however there may be a counterstance where someone who does not eat meat, but does eat fish is not considered a vegetarian and therefore Lee does not fall into the extension for *vegetarian* and the proposition is not true. As such the proposition in (15-a) is counterstance contingent.

- (15) **Context:** Lee does not eat meat, but he does eat fish.
 a. *Lee is vegetarian.*

It would, though, be possible for speakers within a discourse to stipulate exactly what *vegetarian* means in this conversation, for example that people who do not eat meat are vegetarian, whether or not they eat fish. For a predicate such as *tasty*, however, it is not possible to stipulate the meaning. Therefore, Kennedy & Willer (2016) further distinguish between subjective predicates where speakers can resolve uncertainty around meaning within a conversation, such as *vegetarian* and those where they cannot, such as *tasty*. This distinction is accounted for via a second function also fixed by the context set that partitions the counterstance space so that within each partition parameters that support resolving meaning uncertainty are held constant. For the proposition in (15-a) then, there could be a partition where the parameter for fixing the meaning of *vegetarian* is that the person does not eat meat, but can eat fish. Hence (15-a) would be true in all counterstances within the partition. In contrast, for *tasty*, it is not possible for speakers to negotiate or fix the exact dimensions for determining something to be tasty and as such for the proposition in (16) there will be at least one stance within each partition of the counterstance space where the proposition is not true. This proposition is then said to be radically counterstance contingent.

(16) *This pie is tasty.*

Kawahara (2020) argues that, as Japanese ideophones also have variable and indeterminate meanings, propositions containing Japanese ideophones are also radically counterstance contingent. Ideophones do, however, differ from other subjective predicates in that they can be sorted into sets based on a core meaning that the ideophones share. These ideophones can be related to some sort of subjective scale, based on their core meaning. Using predicative ideophones, Kawahara provides the following definitions for ideophones referring to crispiness in Japanese:

- (17) a. $[[P(x)]]^{c,w}$ is defined only if $[[P(x)]]^c$ is radically counterstance contingent in context c . If defined, then $[[P(x)]]^{c,w} = [[CRISPY(x)]]^{c,w}$
 b. P = Predicative ideophones based on the scale of crispiness:
karikari, sakusaku, paripari

The subjectivity in ideophones is then accounted for by the fact that speakers can select different ideophones from within the set depending on their stance. For example, in (11-b), the speaker selects an alternative ideophone from the set of ideophones based on the scale of crispiness and indicates that they have a different stance compared to the speaker in (11-a).

While the account provided by Kawahara (2020) accounts for the subjectivity in ideophones, it requires adjustment to account for subjectivity in other iconic forms. For example, the following spoken language examples of quotation and vocal gestures also seem to demonstrate faultless disagreement.

- (18) a. *And Bill was like [that's not fair]_WHINY VOICE.*
 b. *Well, he said it more like [that's not fair]_SHOUTY VOICE.*
 (adapted from Davidson 2015)

- (19) a. *Bill wouldn't change gear and the engine was like [EEEEEEEEEEEE]_LOUD WHINING.*
 b. *No, it wasn't that bad, it was more like [eeeeeeeeeeee]_QUIET WHINING.*

In (18) the speaker in (18-b) is not contradicting the speaker in (18-a)'s report of what Bill said, but rather denying the iconic representation of *how* Bill spoke. Similarly, the speaker in (19-b) is not contradicting the fact that the engine made a whining noise, but rather (19-a)'s iconic representation, in this case targeting the volume of the whining noise. In both examples, there is no obvious way to independently verify whether one of the speaker's is correct as the disagreement rests upon differing perceptions of how an event took place and differing linguistic strategies for iconically recreating the event.

Arguably, the analysis presented by Kawahara (2020) could be adapted to account for other cases of iconicity. However, I choose to pursue an alternative approach for three reasons. Firstly, as noted by Kennedy & Willer (2016), the counterstance approach cannot directly account for faultless disagreement, which the approach outlined by Lasersohn (2005) does. Secondly, I argue that the subjectivity in ideophones (and other forms of iconicity) arises due to differences in perception. Speakers have different conceptions of which ideophones map best to the real world referents; depending on how speakers perceive both the world around them and the iconicity inherent within ideophones, they will have different preferences for which ideophones best depict which events. As such, I propose an approach that more directly links the subjectivity observed in ideophones to the perception of the relevant judge. Finally, as I will discuss in more detail in Section 4, I choose to separate the conventionalised and iconic meaning components of ideophones, which is more easily realised in the alternative I present. Hence, I propose a model of subjective iconicity using Lasersohn's judge parameter which directly links the iconicity of an ideophone to the judge's perception.

Section 2 has provided the necessary background on subjectivity and in particular its role in ideophones. It has also outlined the approach to subjectivity proposed by Kawahara (2020) and I have briefly discussed my motivation in providing an alternative account. The next section will introduce this alternative analysis.

3. An initial analysis

In this section, I present an analysis of subjective iconicity in ideophones by introducing a judge parameter per Lasersohn (2005) and the adaptations of this approach made by Stephenson (2007). This analysis is presented in two steps. The first deals with how to model the iconic relation between ideophones and the real world referent, which I do by adapting aspects of Davidson (2015) and Henderson (2016). The second step then focuses on making this iconic relation dependent on a judge argument by adapting the judge based approach to epistemic modals proposed by Stephenson (2007).

3.1 Modelling the iconic relation

The first step in this analysis is to capture the iconic relation between the ideophone and the event that it depicts. Dingemanse (2013) argues that ideophones depict through a range of different means; aspects of the utterance including phonology, prosody and gesture all contribute to the iconic relation between the ideophone and the event it depicts. The iconic relation to the event is therefore not just between the linguistic form of the ideophone, but the entire utterance of said ideophone.

In order to capture this iconic relation, these other aspects of the utterance must also be accounted for. One way to do this would be to use demonstrations, *d*, which Davidson (2015) develops from Potts' linguistic objects to account for spoken quotations. Potts (2007a)

introduces linguistic objects, which allow linguistic expressions to be treated as entities within the semantics of quotations. However, linguistic objects are restricted to just the words used in a quotation and therefore Davidson (2015) argues that they are not flexible enough to cover the range of natural language phenomena which co-occur with spoken quotations, such as attempts to mimic a speaker’s voice, other kinds of prosody, gesture and so on. Therefore, Davidson (2015) introduces demonstrations, *d*, to the ontology to account for these cases of spoken quotation. Davidson argues that spoken quotations using *like* in English introduce a demonstration operator, which derives a *demonstration-of* relation between the reported speech event and the demonstration, with the demonstration being the utterance of the reported speech, including aspects such as prosody, gesture, etc. *demonstration-of* (*d, e*) is then true just in case *d* reproduces contextually salient aspects of *e*.²

Henderson (2016) has previously proposed a demonstration-based analysis for ideophones in Tseltal based on Davidson’s approach to quotation. In Tseltal, the basic ideophone construction is a combination of the bare ideophone stem with the reported speech predicate *chi*. However, Henderson argues that ideophones within the language are not quoted, but rather this construction is a form of ideophone demonstration. Specifically, the ideophone construction introduces an operator, IDEO-DEMO, which selects for ideophone stems in the syntax and “takes a linguistic expression and derives a relation between demonstration and events” (Henderson 2016: 673). IDEO-DEMO is defined as in (20).

$$(20) \quad \text{IDEO-DEMO: } \lambda u \lambda d \lambda e [\text{TH}_\delta(d) = u \wedge \text{STRUC-SIM}_{[u]}(d, e)]$$

Whereas *like* in English quotations introduces an operator that requires demonstrations and events to stand in a *demonstration-of* relation, IDEO-DEMO introduces the STRUC-SIM_[u] relation to derive the relation between demonstration and events. Henderson (2016) argues that demonstrations are a subset of events and as such, are linked to individuals through theta roles. Hence, in the case of the basic ideophone construction in Tseltal, the utterance of the ideophone is a demonstration and its theme, TH_δ(*d*) is the ideophone as a linguistic object, *u*. According to Henderson (2016), the ideophone iconically maps to the reported event in virtue of the form of the ideophone, i.e. the STRUC-SIM_[u] relation is dependent on the ideophone as a linguistic object. STRUC-SIM_[u] roughly ensures that the demonstrated event satisfies the predicate of the ideophone and that the demonstration event is structurally similar to the demonstrated event. Henderson (2016) gives the following conditions for STRUC-SIM_[u].

- (21) STRUC-SIM_[u](*d, e*) iff there is a set *P* meeting the following conditions:
- a. **partition**(*P, e*)
 - b. $\forall e' \in P [_{[u]}(e')]$
 - c. $|\mathbf{atoms}(d)| \leq |P|$
 - d. TEMP-SIM (*P, atoms*(*d*))

STRUC-SIM_[u](*d, e*) then applies when the demonstrated event can be partitioned (cf. (21-a)) so that each subevent satisfies the ideophone predicate (cf. (21-b)), the cardinality of the partition

² Interestingly, Davidson (2015) also applies this analysis to classifier predicates and action role shift in American Sign Language. As noted in §1, ideophones in spoken language are potentially comparable to these phenomena in sign languages. The analysis proposed in this paper is heavily based on Davidson (2015) and as such, it seems likely that my analysis could be extended to such sign language phenomena. However, this is beyond the scope of this work and will have to wait for future research.

is equal to or greater than the atomic parts of the demonstration (cf. (21-c)) and there is a temporal similarity between the partition and the atomic parts of the demonstration (cf. (21-d)). The Tseltal sentence in (22) can then be analysed as in (23).

(22) *Tsok' x-chi-Ø ta mantekat*
 IDEO say in lard
 'It goes "tsok' " in the lard.'

(23) $\exists e [AG(e) = x_1 \wedge TH_\delta(d_{13}) = \text{tsok}' \wedge \text{STRUC-SIM}_{\text{tsok}'_{-}}(d_{13}, e) \wedge \text{LOC} = \sigma x[\text{LARD}(x)]]$

Henderson (2016) gives the truth conditions of (22) as follows; there is an event e that takes place in the lard and the agent is an individual x_1 , given by the context or variable assignment, and there is a demonstration d_{13} , which has the linguistic object *tsok'* as its theme and the demonstration event is structurally similar to e . In this case structural similarity requires that e can be partitioned into a single event, as d_{13} is atomic, and that this must be an event of frying sound emission in order to satisfy the predicate $\text{tsok}'_{-} = \lambda e. \text{TSOK}'(e)$.

In my analysis, I follow several aspects of Henderson (2016), but the approaches differ in two crucial respects. Firstly, if we assume that the iconic relation between an ideophone and an event is not purely a result of the linguistic form of the ideophone, but rather aspects of the utterance such as prosody, volume and gesture contribute to this iconic mapping, then $\text{STRUC-SIM}_{u_{-}}$ appears to depend too heavily on the ideophone as a linguistic object to derive the iconic relation and as such is too constrained to capture the multiple ways that an ideophone's utterance can be iconic. Furthermore, Henderson (2016) incorporates the conventionalised meaning into the $\text{STRUC-SIM}_{u_{-}}$ relation by requiring all subevents to satisfy the ideophone predicate, whereas I choose to separate the iconic meaning and the conventionalised meaning components of an ideophone (to be discussed in Section 4). Finally, in Henderson's approach, the ideophone's iconic meaning is directly integrated into the truth conditions of the sentence. Although Henderson does not directly discuss the at-issue status of the ideophones in Tseltal, this integration would suggest that the ideophone is at-issue. In the case of (22), this could be appropriate as the ideophone *tsok'* is integral to the meaning of the sentence and must therefore make some sort of at-issue contribution, however as argued in Barnes et al. (2022), there is evidence that many ideophone structures are not at-issue and as such, ideophones may not form part of the truth conditions (again, this will be further discussed in §4.1).

While I do not adopt Henderson's $\text{STRUC-SIM}_{u_{-}}$, I also choose not to employ the *demonstration-of* relation proposed by Davidson (2015). The approach given in Davidson (2015) argues that quotations are demonstrations of a speech event, whereas I argue that ideophones are not inherently demonstrations of events, but rather the occurrence of an ideophone alongside the report of an event results in the inference that the ideophone iconically maps to the event. I argue therefore that the utterance of the ideophone stands in a similarity relationship to the depicted event and model this using the SIM predicate (cf. Ebert et al. 2020; Umbach & Gust 2014). $\text{SIM}(x, y)$ is true just in case that some property of x , which is relevant in the given context, can also be said to hold of y . For example, for a particular speaker uttering (24), the reduplication in the ideophone *plitsch-platsch* 'splish splash' could be said to be the relevant property and in order for the SIM relation to apply, the event would have to include multiple splashing events.

- (24) *Der Frosch geht plitsch platsch die Treppe hoch.*
 the frog goes IDEO the stairs up
 ‘The frog goes splish splash up the stairs.’

SIM is therefore an underspecified similarity relation which allows for the multidimensional and undetermined iconic mappings that may occur between an ideophone and an event. Applying this analysis to the previous examples, the sentence in (25-a) would receive an interpretation as in (25-b), which can be roughly glossed as in (25-c).

- (25) a. *Peter geht holterdipolter die Treppe runter.*
 b. $[e] \wedge \text{agent}(e, \text{Peter}) \wedge \text{goes-down-the-stairs}(e) \wedge [d] \wedge d = d_{\text{holterdipolter}} \wedge \text{SIM}(e, d_{\text{holterdipolter}})$
 c. There is an event of going down the stairs, of which Peter is the agent and there is a demonstration, namely the utterance of *holterdipolter*, and this utterance is similar in the relevant dimensions to the event of Peter going down the stairs.

This analysis then accounts for the iconic relation between the ideophone and the event, but does not account for the subjectivity of the ideophone’s iconicity. How then can we account for the subjectivity of the similarity relation between the ideophone utterance and the event? This is the next step of the analysis. In the following section, I will outline how I adapt the approaches of Lasersohn (2005) and Stephenson (2007) in order to model the subjective iconicity in ideophones.

3.2 Modelling subjective iconicity

The next step in our analysis is then to make the iconic relation outlined in §3.1 dependent on a judge parameter. In order to do this, I adapt the analysis of epistemic modals proposed by Stephenson (2007). Stephenson argues that a judge argument is not only involved in PPTs such as *fun*, but that epistemics such as *must* also depend on a particular individual whose knowledge is relevant for the epistemic proposition. She provides a lexical entry for *must* as in (26).³

- (26) $[[\text{must}]]^{c:w,t,j} = [\lambda p. \forall w' \text{ compatible with } j\text{'s knowledge in } w \text{ at } t, p(w')(t)(j) = 1]$

In this simplified version of the epistemic modal, we can see that the epistemic conversational background, which determines a ranked set of accessible worlds in which the prejacent is true, is dependent not only on what is known in a particular world at a particular time, but also to a particular individual. For example, assuming John as the judge in (27), the sentence would be true iff it is raining in all world’s compatible with John’s knowledge in world *w* at time *t*.

- (27) *John: It must be raining.*

In terms of ideophones, I argue that the iconic mapping of an ideophone to an event or another referent is dependent on a particular individual’s perception in a world at a time. In order to model this, I will employ perceptual worlds, which should be considered a subset of epistemic

³ Stephenson (2007) continues to adapt Lasersohn’s analysis and eventually introduces a two-place argument for PPTs, while epistemic modals have an integrated judge argument. However, this is not relevant to the analysis proposed here and will not be discussed further.

worlds. The conception of iconic mapping is dependent on an individual’s sensory knowledge and experience of the world, as well as their language knowledge and experience (cf. Occhino et al. 2017; Sehyr & Emmorey 2019), which are components of an individuals’ epistemic experience of the world. For example, knowing what sounds that a wet frog makes going up a set of stairs, combined with the knowledge of how English generally encode sounds involving water will allow a speaker to conceptualise the event depicted by the ideophone in a sentence such as (28).

(28) *The frog went splish splash up the stairs.*

Formally then, there is an operator similar to a modal base, which is triggered when the ideophone is uttered. This operator is a function from worlds to sets of propositions and more specifically, it returns the set of worlds that are compatible with the judge’s, j , perception in a world w at time t .

(29) Perceptual operator:

A function PERC such that for any world, w , time, t and judge, j , $\text{PERC}(w)(t)(j)$ returns the set of worlds, W , which are compatible with j ’s perception in w at t .⁴

We can then employ this new operator in our example as in (30).

- (30) a. *Peter geht holterdipolter die Treppe runter.*
 b. $[e] \wedge \text{agent}(e, \text{Peter}) \wedge \text{goes-down-the-stairs}(e) \wedge [d] \wedge d = d_{\text{holterdipolter}} \wedge \forall w' \in \text{PERC}(w)(t)(j) : \text{SIM}(e, d_{\text{holterdipolter}})$ in w'
 c. There is an event of going down the stairs, of which Peter is the agent and there is a demonstration, namely the utterance of *holterdipolter*, and in all worlds compatible with the judge’s, j , perception in world, w , at time, t , this utterance is similar in the relevant dimensions to the event of Peter going down the stairs.

This analysis then makes the iconic similarity relation between the ideophone utterance and the event dependent on a judge’s perception, which then accounts for the subjectivity with respect to the iconicity in ideophones.

One issue that remains to be addressed, however, is the question of who can be the judge in ideophone constructions. As noted in §2.2, ideophones, similarly to PPTs, seem to give rise to an acquaintance inference; the use of an ideophone implies direct experience with the event that the ideophone depicts. Given this, it seems logical to assume that the judge in ideophones is by default the speaker. However, the question remains as to whether the judge can shift and if so, under which circumstances. It seems that the ideophone *schwuppdwupp* in (31) can be attributed to Peter’s perspective.

- (31) *Peter glaubt, ich habe alles einfach schwuppdwupp gemacht, aber es hat
 Peter believes I have everything simply IDEO done but it has
 Stunden gedauert!
 hours taken*

⁴ The notion of a perceptual operator is adapted from the epistemic alternatives proposed by Stephenson (2007). However, while epistemic alternatives fix the judge across worlds and times, the perceptual operator does not.

‘Peter thinks I did it all just like that, but it took hours!’

Similarly, in cases of reported speech, it also seems to be possible to shift the judge to the individual whose speech is being reported, as in (32).

- (32) *Marie sagt, Peter ist die Treppe holterdipolter runtergelaufen!*
Marie says Peter is the stairs IDEO down-gone
‘Marie said Peter went helter-skelter down the stairs.’

These examples also resemble the perspective shifts described by Potts (2007b) for expressives, as in (33), and Lasersohn (2005) for PPTs, as in (34).

- (33) *I am not prejudiced against Caucasians. But John, who is, says/thinks that you are the worst honky he knows.*
(Schlenker 2003: (109b) as cited by Potts 2007b)

- (34) *John believes that riding roller coasters is fun.* (Lasersohn 2005: 677)

It seems then that the judgement argument in ideophones can be shifted when the ideophones are embedded under attitude verbs or in quotations. The exact explanation for these shifts and the question of whether there are also other instances where the judge can shift will have to wait for future research.

This section has provided an analysis that models the iconic relation between utterances of ideophones and events and captures the subjectivity of the relation by making it dependent on the judge’s perception. Nevertheless, as Henderson (2016) highlights, the event an ideophone depicts must also satisfy the ideophone predicate, or what I choose to call the conventionalised meaning of an ideophone, in order to be used felicitously. For example, *splish-splash* cannot be used when describing a dry frog hopping up completely dry stairs. Currently, the meaning contribution of ideophones’ conventionalised meanings is not accounted for in this analysis. In the next section, I will therefore discuss this issue in more detail before outlining a potential solution.

4. Developing the analysis

There is a key distinction between ideophones and PPTs that has not yet been discussed in this paper. Lasersohn (2005) argues that two opposing views on a particular PPT result in a contradiction, but no objective facts can decide the matter. However, for ideophones, this is not always the case and there are examples where the objective facts of a situation clearly render the use of an ideophone inappropriate. For example, given a context where Peter walks calmly and quietly down the stairs, the use of either *holterdipolter* or *rumpeldipumpel* is rendered infelicitous, as can be seen in (35).

- (35) **Context:** Peter walks very calmly and quietly down the stairs.
a. *??Peter geht die Treppe holterdipolter/ rumpeldipumpel runter.*
Peter goes the stairs IDEO/IDEO down
‘Peter is going helter-skelter down the stairs.’
b. *Hey warte mal! Er geht doch völlig ruhig runter!*

hey wait once he goes but completely calmly down
'Hey wait a minute! He's going down perfectly calmly!'

In contrast, fully subjective predicates such as *fun* are much less restricted. For example, an assertion as in (36) would not be considered infelicitous, even if it may be considered an unusual perspective on what constitutes fun.⁵

(36) *Cleaning toilets is fun!*

Whereas PPTs rely (almost) entirely on the internal judgements of the individual filling the judge argument, ideophones are internal judgements of an objective event and must have some basis in reality. I argue that this basis in reality is contained within the conventionalised meaning of the ideophone. As Henderson (2016) argues, the event depicted by the ideophone must in some way conform to this conventionalised meaning. For example, in order for *holterdipolter* or *rumpeldipumpel* to be felicitously used there must be a certain amount of noise or chaotic movement present in the depicted event. As such, I propose that ideophones have two meaning components; i) a conventionalised meaning and ii) a subjective iconic meaning. The latter component has been discussed in detail in the previous section. The former is, however, not yet incorporated into the analysis. I propose to follow Kawahara (2020) and argue that ideophones form sets based on shared conventionalised meanings. For example, German ideophones such as *holterdipolter* and *rumpeldipumpel* would belong to a set of ideophones depicting loud, uncontrolled or chaotic events, whereas the ideophones *ratzfatz*, *ruckzuck* and *zack zack* would indicate events occurring very quickly or within a short time span.

In the case of (37-b), the speaker is therefore not denying the fact that Peter ran down the stairs loudly and in a chaotic manner, but rather they are asserting that in their perception, this event is better iconically mapped by *rumpeldipumpel* than by *holterdipolter*.

- (37) a. *Peter geht die Treppe holterdipolter runter.*
Peter goes the stairs IDEO down
'Peter is going helter-skelter down the stairs.'
- b. *Naja, er geht die Treppe nicht holterdipolter herunter. Er geht sie eher rumpeldipumpel runter.*
well he goes the stairs not IDEO down he goes them rather
rumpeldipumpel runter.
IDEO down
'Well, he's not really going helter-skelter down the stairs. He's going down more head over heels.'

However, it is worth mentioning that the conventionalised meanings of ideophones are not always easy to define or stipulate. Experimental work by Ćwiek (2022) showed that German speakers are split roughly fifty-fifty between those who perceive *holterdipolter* as predominantly encoding sound and those who perceive it as predominantly encoding movement. As such, it is plausible that ideophones encode two types of subjectivity. As previously mentioned in §2.1, Kennedy (2013) describes two types of subjectivity:

⁵ Notably, some PPTs do have some restrictions in terms of their meaning. For example, *tasty* can only be used to describe referents that have a taste.

dimensional, where the standard of comparison used is uncertain; and evaluative, where the dimensions for comparison can be differently weighted between speakers. Kennedy argues that only the latter type of subjectivity involves a judge argument. The main focus of this paper has been evaluative subjectivity in ideophones, as perceptions of iconicity are clearly internal judgements which cannot be stipulated. Nevertheless, it does appear that denial or contradiction of the conventionalised meaning components of ideophones can also result in faultless disagreement, as in (38).

- (38) a. *Peter geht die Treppe holterdipolter runter.*
 Peter goes the stairs IDEO down
 ‘Peter is going helter-skelter down the stairs.’
- b. *Naja, er geht die Treppe nicht holterdipolter herunter. Er geht sie zwar laut runter, aber so chaotisch ist es nicht.*
 no he goes the stairs not IDEO down he goes them indeed
 loudly down but so chaotic is it not
 ‘Well, he’s not really going helter-skelter down the stairs. He’s going down them loudly, but it’s not that chaotic.’

Here then, the speakers disagree about which events can be felicitously modified by *holterdipolter*. The speaker in (38-a) defines an event as *holterdipolter* when it is loud, whereas the speaker in (38-b) requires the event to be both loud and chaotic. The speakers then have different standards for *holterdipolter*. Therefore, I model the ideophone’s conventionalised meaning contribution as equivalent to other manner adverbials, i.e. as an event modifier. This modifier will then behave as other gradable adverbials and require the event to reach a particular standard in order to have the property of the ideophone. The exact specification of the semantics for ideophones as gradable adverbials will be left to future research. Here the modification will simply be modelled as in (39).

- (39) a. *Peter geht holterdipolter die Treppe runter.*
- b. $[e] \wedge \text{agent}(e, \text{Peter}) \wedge \text{goes-down-the-stairs}(e) \wedge \text{holterdipolter}(e) \wedge [d] \wedge d = d_{\text{holterdipolter}} \wedge \forall w' \in \text{PERC}(w)(t)(j) : \text{SIM}(e, d_{\text{holterdipolter}}) \text{ in } w'$
- c. There is an event of going down the stairs, of which Peter is the agent and this event has the property of being *holterdipolter* and there is a demonstration, namely the utterance of *holterdipolter*, and in all worlds compatible with the judge’s, *j*, perception in world, *w*, at time, *t*, this utterance is similar in the relevant dimensions to the event of Peter going down the stairs.

The separation of the ideophone’s conventionalised and iconic meaning then allows for the different kinds of faultless disagreement discussed for ideophones. It also goes some way towards accounting for the at-issue status of ideophones in differing constructions, as discussed in Barnes et al. (2022). The following section will therefore discuss how exactly the analysis presented here can explain the at-issue status of ideophones.

4.1 At-issueness

Barnes et al. (2022) discuss the at-issue status of ideophones in detail and provide experimental evidence for the default not-at-issue status of adverbial ideophones in German. Whereas PPTs

make an at-issue contribution about a particular individual's personal taste, ideophones make a not-at-issue contribution concerning an individual's perception of iconicity. This distinction can be seen in examples (40) and (41). In order to negate *holterdipolter* the speaker in (40-b) must interrupt the discourse to suggest an alternative ideophone to depict the event. In doing so, the speaker asserts that in their perception, the event of Peter running down the stairs is better depicted by *rumpeldipumpel*. In contrast, in (41) it is perfectly possible for the speaker to directly deny *fun* and they do not need to provide an alternative.

- (40) a. *Peter geht die Treppe holterdipolter runter.*
 Peter goes the stairs IDEO down
 'Peter is going helter-skelter down the stairs.'
- b. *Naja, er geht die Treppe nicht holterdipolter herunter. Er geht sie eher rumpeldipumpel runter.*
 well he goes the stairs not IDEO down he goes them rather
 IDEO down
 'Well, he's not really going helter-skelter down the stairs. He's going down more head over heels.'
- (41) a. *John: Rollercoasters are fun!*
 b. *Mary: No, rollercoasters are not fun.*

Notably, the conventionalised meaning component of *holterdipolter* is also not at-issue, as can be seen in (42), where it is possible to directly deny the assertion that Peter ran down the stairs, as in (42-b), but not the fact that he ran down the stairs in a loud, chaotic way, i.e. the conventionalised meaning of *holterdipolter*, as in (42-c). Instead, this meaning component must be targeted with a discourse interrupting interjection, as in (42-d).

- (42) a. *Peter geht die Treppe holterdipolter runter.*
 Peter goes the stairs IDEO down
 'Peter is going helter-skelter down the stairs.'
- b. *Nein, das stimmt nicht. Er geht die Treppe hoch.*
 No that is right not he goes the stairs up
 'No, that's not true. He's going up the stairs.'
- c. *#Nein, das stimmt nicht. Er geht doch völlig geordnet runter.*
 No that is right not he goes but completely orderly down
 'No, that's not true. He's going down in a completely calm way.'
- d. *Hey, warte mal. Peter geht doch völlig geordnet runter.*
 hey wait once Peter goes but completely orderly down
 'Hey wait a minute. Peter's going down in a completely calm way.'

Adopting the notation p and p^* proposed by Anderbois et al. (2015) to mark at-issue and not-at-issue content respectively, the analysis presented so far can be expanded to include the at-issue status of the meaning contributions in sentences with ideophones. As such, (43-a) can then be analysed as in (43-b).

- (43) a. *Peter geht holterdipolter die Treppe runter.*
 b. $[e] \wedge \text{agent}(e, \text{Peter}) \wedge \text{goes-down-the-stairs}_p(e) \wedge \text{holterdipolter}_{p^*}(e) \wedge [d] \wedge d =$

- $d_{holterdipolter} \wedge \forall w' \in \text{PERC}(w)(t)(j) : \text{SIM}_p^*(e, d_{holterdipolter})$ in w'
- c. **At-issue:** There is an event of going down the stairs, of which Peter is the agent.
Not-at-issue: This event has the property of being *holterdipolter* and there is a demonstration, namely the utterance of *holterdipolter* and in all worlds compatible with the judge's, j , perception in world, w , at time, t , this utterance is similar in the relevant dimensions to the event of Peter going down the stairs.

However, in the case of verbal forms of ideophones, the conventionalised meaning component seems to be shifted towards at-issue status and can be directly targeted by a denial, as in the case of *poltern*, the verbal form of *holterdipolter* in (44).

- (44) a. *Peter poltert die Treppe runter.*
Peter goes-LOUD-CHAOTIC the stairs down
‘Peter is going helter-skelter down the stairs.’
- b. *Nein, das stimmt nicht. Er geht doch völlig geordnet runter.*
No that is right not he goes but completely orderly down
‘No, that’s not true. He’s going down in a completely calm way.’

It appears though that the iconic meaning remains not at-issue and must continue to be targeted through some sort of discourse interrupting correction of the iconic relationship between the verbal ideophone and the event of Peter running down the stairs, as in (45).

- (45) a. *Peter poltert die Treppe runter.*
Peter goes-LOUD-CHAOTIC the stairs down
‘Peter is going helter-skelter down the stairs.’
- b. *Naja, er poltert nicht die Treppe runter. Er rumpelt sie eher runter.*
well he goes-LOUD-CHAOTIC not the stairs down he
goes-LOUD-CHAOTIC them rather down
‘Well, he’s not really going helter-skelter down the stairs. He’s going down more head over heels.’

This difference can then be accounted for by the separation of the conventionalised and iconic meaning components of *holterdipolter*. When the ideophone is used verbally, it is more grammatically integrated than in the adverbial cases and its conventionalised meaning component becomes essential to the integrity of the sentence and must therefore shift towards at-issueness. On the other hand, the iconicity of the ideophone is generally reduced compared to its adverbial form (see Dingemanse 2015; Dingemanse & Akita 2016 for discussion of the inverse relation of expressiveness and grammatical integration in ideophones) and the iconic meaning remains not at-issue. A potential analysis of (46-a) could look like (46-b).

- (46) a. *Peter poltert die Treppe runter.*
- b. $[e] \wedge \text{agent}(e, \text{Peter}) \wedge \text{goes-down-the-stairs}_p(e) \wedge \text{poltern}_p(e) \wedge [d] \wedge d = d_{\text{poltern}} \wedge \forall w' \in \text{PERC}(w)(t)(j) : \text{SIM}_p^*(e, d_{\text{poltern}})$ in w'
- c. **At-issue:** There is an event of going down the stairs, of which Peter is the agent and this event has the property of being *poltern*.

Not-at-issue: There is a demonstration, namely the utterance of *poltern*, and in all worlds compatible with the judge's, *j*, perception in world, *w*, at time, *t*, this utterance is similar in the relevant dimensions to the event of Peter going down the stairs.

Another issue concerning German ideophones could also be accounted for through the separation of conventionalised and iconic meaning in ideophones. As noted by Barnes et al. (2022), certain ideophones in German appear to be naturally more at-issue than others. Even when used adverbially, it seems to be possible to directly deny the conventionalised meaning contribution of *ratzfatz* in (47).

- (47) a. *Die Bank hat ratzfatz eine Milliarde gewonnen.*
the bank has IDEO a billion won
'The bank earned a billion very quickly.'
- b. *Nein, das stimmt nicht. Es war nur zehn Millionen.*
no that is right not it was only ten million
'No, that's not true. It was only ten million.'
- c. (?) *Nein, das stimmt nicht. So schnell ging das gar nicht.*
no that is right not so quickly went that absolutely not
'No, that's not true. It wasn't that quick at all!'

Barnes et al. (2022) note that ideophones such as *ratzfatz* and *ruckzuck* have more specified conventionalised meanings in German than other ideophones⁶ and it is possible that the lack of uncertainty in this meaning component results in the observed shift towards at-issueness. Exactly how these two aspects of meaning interact and produce this effect remains to be seen and a thorough explanation of this is left to future research.

The analysis proposed in this paper has accounted for the iconicity in ideophones and modelled the subjectivity in this iconicity, as well as providing a way for the conventionalised meaning components of ideophones to be satisfied. The separation of these two components of meaning also goes some way towards explaining the shifting at-issue status of ideophones in German, as observed by Barnes et al. (2022). It appears then that this analysis can account for the iconicity and subjectivity in ideophones, as well as their at-issue status. The question that remains is whether it can be extended to other iconic phenomena. The final section of this paper therefore aims at providing an initial answer to this question and attempts to apply the analysis to other examples of iconicity in spoken language.

5. Extending the analysis beyond ideophones

As discussed in §2.3, one of the goals of this analysis of subjectivity in ideophones is to be able to extend it to other examples of iconicity in spoken language. In this section, I will briefly

⁶ The exact reason for this is yet to be determined, however, Barnes et al. (2022) highlight that these ideophones occur much more frequently in German than others such as *plitsch-platsch* and point out that Dingemanse (2017) observed more frequently used ideophones in Siwu were more likely to undergo deideophonisation. Deideophonisation is likely to further standardise the meaning of ideophones and as such they may have less flexible meanings than other ideophones. Thus there does appear to be a link between the frequency with which an ideophone occurs in a language and its deideophonisation and subsequent standardisation.

discuss how the analysis could be applied to iconic enrichments in spoken quotations, as well as so-called vocal gestures.

5.1 Spoken quotations

Quotations are in some respects similar to ideophones as they not only contain conventionalised linguistic material in the form of the reported speech, but also iconic depictions of how something was said. As such, the denial or contradiction of the iconic components of quotations also seems to result in faultless disagreement, as can be seen in (48).

- (48) a. *And Bill was like [that's not fair]_WHINY VOICE.*
 b. *Well, he said it more like [that's not fair]_SHOUTY VOICE.*

Here the speaker in (48-b) is not contradicting the report of what Bill said, but rather the iconic representation of *how* he said it, i.e. with a whiny voice. This again seems to resemble the faultless disagreement seen in ideophones; whereas one speaker perceives Bill as having spoken in a whiny voice, the second speaker perceives the utterance being made in a shouty voice. A rough analysis of the assertion in (48-a), following both Davidson (2015) and the adaptations to her analysis made by Ebert & Hinterwimmer (2022), can be seen in (49).

- (49) a. *And Bill was like [that's not fair]_WHINY VOICE.*
 b. $[e] \wedge \text{agent}(e, \text{Bill}) \wedge \text{say}_p(e) \wedge \text{form}_p(e) = \text{that's not fair} \wedge [d] \wedge d = d_{\text{that's not fair}} \wedge \forall w' \in \text{PERC}(w)(t)(j); \text{SIM}_{p^*}(e,d) \text{ in } w'$
 c. **At-issue:** There is an event of speaking “That’s not fair”, of which Bill is the agent.
Not-at-issue: There is a demonstration, namely the utterance of *That’s not fair* and in all worlds compatible with the judge’s, j , perception in world, w , at time, t , this utterance is similar in the relevant dimensions to the event of Bill saying that’s not fair.

I follow Ebert & Hinterwimmer (2022) and argue that the inference of a similarity relation between the event and the demonstration is triggered by the temporal alignment of the reported speech and the demonstration, i.e. the fact that the speaker uses a whiny voice as they repeat Bill’s speech triggers the inference that Bill spoke in a whiny voice. Furthermore, as with the ideophones, I separate the iconic representation of what Bill said from the report of what he said, which allows us to capture the faultless disagreement in (48), where the speaker in (48-b) contradicts the report of *how* Bill spoke and not the report of what he says. In this case, the speaker in (48-b) asserts that in all worlds compatible with their perception, their demonstration better iconically maps to Bill’s speech than the demonstration given by the speaker (48-a), i.e. that Bill spoke with a shouty voice and not a whiny voice. The at-issue status of the two meaning components also resembles that of predicative ideophones, with the speech report of what Bill said being at-issue, while the iconic depiction of his voice is not at-issue.

5.2 Vocal gestures

As is well established in the literature, it is not only speech that can be quoted, but almost anything can be iconically represented in a quotation structure, as can be seen in (50).

- (50) a. *Bill wouldn't change gear and the engine was like [EEEEEEEEEE]_LOUD WHINING.*
 b. *Well, it wasn't that bad, it was more like [eeeeeeeeeeee]_QUIET WHINING.*

This is similar to the example in (48), with the major exception that no linguistic material is quoted, rather the speakers' attempts to iconically represent the noise of the engine using either a loud or quiet whining noise. Again, this is a case of faultless disagreement similar to that seen in ideophones and quotations, as the speakers disagree not on the fact that the engine made a whining noise, but on how to iconically represent this whining event with a vocal gesture. We can therefore give (51-a) the semantic form in (51-b).

- (51) a. *The engine was like [EEEEEEEEEE]_LOUD WHINING!!!*
 b. $[e] \wedge \text{instrument}(e,x) \wedge \text{engine}(x) \wedge \text{SOUND_EMISSION}_p(e) \wedge [d] \wedge d = d_{\text{EEEEEEEEEE_LOUD WHINING}} \wedge \forall w' \in \text{PERC}(w)(t)(j); \text{SIM}_p(e,d) \text{ in } w'$
 c. **At-issue:** There is an event of sound emission from the engine and there is a demonstration, namely the utterance of *[EEEEEEEEEE]_LOUD WHINING* and in all worlds compatible with the judge's, *j*, perception in world, *w*, at time, *t*, this utterance is similar in the relevant dimensions to the event of sound emission from the engine.

In this particular case, there is no conventionalised meaning component in the vocal gesture, instead the engine sound is being directly quoted via the demonstrative *like*, which appears to shift the entire iconic meaning component towards at-issueness (cf. Ebert et al. 2020 for discussion of demonstratives as dimension shifters).

In summary, the proposal for iconicity subjectivity presented in this paper appears to be applicable to not only ideophones, but also cases of iconicity in spoken quotation and vocal gestures. It is to be hoped that the analysis could therefore be expanded to account for other iconic enrichments in future work.

6. Conclusion

This paper has provided an analysis of ideophones that accounts for three crucial aspects of the phenomena. Firstly, the analysis of the ideophone utterance as a demonstration which stands in a similarity relation to the reported event captures how different aspects of the ideophone utterance such as prosody, speech rate and gesture contribute to the perceived resemblance between the utterance and the event. Secondly, the dependency of this similarity relation on an individual's perception of the world around them and the utterance itself accounts for the subjectivity inherent in the perception of iconicity and as we have seen in Section 5, this analysis can be expanded to cover a range of iconic phenomena. Finally, the approach outlined here separates ideophones' meaning contributions into two separate parts; conventionalised meaning and iconic meaning, which contributes to a better understanding of the varying at-issue status of ideophones. The goal of future analyses should however aim at capturing the dimensional subjectivity that also seems to play a role in the conventionalised meaning of ideophones and how the iconic and conventionalised meaning components of ideophones interact with and influence each other.

Abbreviations

COP = copular
COMP = complementiser
IDEO = ideophone
NEG = negation
PPT = predicate of personal taste

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