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Scare quotes in name-informing constructions: A self-paced reading study on the processing of modalizing quotational constructions

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Abstract

Name-mentioning constructions as in *This person is called a wine connoisseur* can give rise to two distinct meanings: a literal or a non-literal, ironic reading. This investigation presents empirical evidence from a self-paced reading study that analysed the reading times for target nominals in sentential constructions using predicates like *call* and *refer to as* in German. The target words were either simplicia or compounds with a high or low lexical frequency. The study revealed that the mean reading time for non-literal target words is longer as opposed to literal conditions and that compounds are preferred in name-informing conditions while simplicia are processed faster in ironic sentences.

Keywords: irony; quotational construction; name-mentioning; self-paced reading

Introduction

Quotational constructions as in (1a) point to linguistic shapes and inform the addressee about the name of a lexical concept, i.e., in this case, the compound noun *moonbow*.

(1a) This natural phenomenon is called “moonbow”.

(1b) Someone like this is called an “expert”.

Name-mentioning constructions (NMC) involve naming verbs such as *call* or *refer to as* that function as name-selecting predicates. The event argument in (1a) adopts a generic meaning. The semantics of the verb *call* entails a copular relation (Härtl, 2020; Matushansky, 2008), more specifically, an identificational copular relation in which the two nominals are referentially identified. Assuming that the speaker “veridically commits” (see Giannakidou & Mari, 2019) to the truth of the utterance, i.e. that the phenomenon is a moonbow. The semantics of the nominal does not deviate from the conventionalised semantics, meaning that the nominal is used non-metaphorically.

In comparison to a sentence like *Kassel is a city in Hesse*, in which the word “Kassel” is used with its customary reference, the expression “Kassel” is mentioned in constructions like *“Kassel” has six letters*, describing the linguistic setup of the word. As a matter of fact, mentioned expressions create reference to the word itself and are frequently accompanied by quotation marks (Cappelen & Lepore, 1997; Saka, 1998). As shown in the pure quotation, the notion of *quotation* relates to a mental operation that enables us to “talk about language” (Cappelen & Lepore, 2012).

Name-informing quotations (NIQs) as presented in (1a) typically involve three arguments: an agent *x* (*one*), a theme

y (*phenomenon*) as well as the name *z* (*moonbow*) of the theme *y*. Crucially, NMCs can give rise to different readings. On the one hand, NMCs give rise to a name-informing interpretation when the agent (*x*) and the event variable (*e*) are bound generically. On the other hand, a modalizing interpretation of an existential closure of the two arguments is entailed as represented in (1b) (Härtl, 2018). In contrast to the literal interpretation in (1a), speakers express a specific modality, i.e. by expressing a negative or evaluative component of the lexicalised expression, for example, the nominal *expert* in sentence (1b). Person *X* in (1b) has the name ‘expert’, but the descriptive content of the utterance expresses that *X* is not really an expert. The modalizing use of an expression leads to a distancing interpretation: a speaker refers attitudinally to the shape of a certain denotatum’s name. In example (1b), the nominal head, which is a highly familiar expression, occurs in quotation marks with which the speaker expresses a modality, i.e. signals that the quoted expression is not appropriate in this context and therefore deviates from the stereotypical semantics (cf. Gutzmann & Stei, 2011). In this “modalizing” use (Klockow, 1978), the construction signals a non-standard use of the quoted expression and is often accompanied by quotation marks. The use of quotation marks in sentences in which the speaker distances themselves from the name of a concept leading to an ironic or sarcastic interpretation of the quoted nominal is known as *scare quotes* (Härtl, 2018; Predelli, 2003; Recanati, 2001). Context plays a crucial role for the addressee to deviation in meaning from the stereotypical denotation.

In the literature, NMCs have also been labelled as “name-informing constructions” because these sentential constructions have the function of informing the addressee about a lexicalised name of a concept. Most frequently, the quoted nominal of NMCs are compounds. This is grounded in the fact that in languages like German, compounds have a predisposition to fulfil a naming function (Schlücker & Hüning, 2009). Naming is understood as assigning a sign to a conceptual category (Booij, 2010; Štekauer, 1998). It is a requirement that name-mentioning predicates can only be used when the respective name is worthy of being used as a name. While less-frequent compounds in NMCs meet the criterion of being “name-worthy”, highly conventionalised simplicia fail to meet this precondition, as becomes apparent in a sentence like *Man nennt das ein Hotel* (‘One calls this a hotel’). In contrast, highly conventionalised nouns are used in modalizing readings, giving rise to an ironic reading (cf. Härtl, 2018). Consequently, there is a difference in the

acceptability of the quoted nominal in NMCs depending on their word type and lexical frequency.

Theoretical considerations

Traditionally, irony has been described as a trope, i.e. a figure of speech which goes back to the distinction between language and metalanguage (cf. Attardo, 2000). In the Gricean tradition, the ‘standard pragmatic view’ has been an influential theoretical approach to figurative language comprehension. Ironic utterances violate Grice’s Cooperative Principle (see Grice, 1989), more specifically the Maxim of Quality, as the speaker asserts something they believe to be false (Meibauer, 2007), which results in irony functioning as a conversational implicature. Irony stereotypically implies a negative, critical attitude towards some object. This basic idea is also reflected in Grice’s work as he states that irony is connected to expressing a feeling or evaluation (Grice, 1975). According to the Gricean ‘standard pragmatic view’, the discrepancy between the two interpretations is crucial for irony processing. Under this account, the literal meaning has been argued to be processed first, followed by applying an alternative interpretation due to the discrepancy. Consequently, irony processing should be more costly and take longer than the literal interpretation.

Post-Gricean approaches treat verbal irony as a type of echoic allusion to an attributed utterance or thought in which the ironic utterance indicates dissent from the utterance (Sperber & Wilson, 1981). The speaker echoes a thought or utterance to express a critical or mocking attitude. According to this approach, the speaker aims to express a dissociative attitude to a tacitly attributed utterance or thought based on some perceived discrepancy between how it represents the world and how things actually are.

State of the art

Experimental research on quotation has mainly focussed on the processing of reported speech as well as on irony comprehension. So far, the psycholinguistic literature on irony comprehension has aimed at understanding the cognitive mechanisms associated with figurative language, how irony is acquired, and how cognitive impairments affect irony comprehension (Gibbs & Colston, 2007). Experimental research on name-mentioning quotation and the special type of scare quotation is sparse.

In a study on NMC constructions, Härtl & Seeliger (2019) provide evidence that the non-literality of expressions involved in ironic utterances is “more” at-issue, whereas the speaker’s attitude to evaluate a referent (negatively) is treated as less at-issue. The authors conclude that at-issueness is a graded notion.

A corpus investigation by Schrader (2017) has shown that highly frequent nominals are more likely to link to ironic uses of the construction: the data proved an interaction to hold between the lexical frequency of a mentioned nominal

involved in *sogenannt-constructions* its interpretation as either literal or modalizing.

Recent empirical evidence has shown that modal particles in German such as *ja* (‘yes’) and *aber* (‘but’) assist a mock surprise reading and are perceived as more pretended by the addressee (Härtl, 2023). Further, modal particles and scare quotes can support the comprehension of irony (cf. Schlechtweg & Härtl, 2022).

Experimental investigation

The current study aims to answer the following question: What are the linguistic properties of expressions mentioned in modalizing contexts as opposed to name-informing contexts? More specifically, empirical evidence will be put forward to show how the interpretation of literal and non-literal NMCs is influenced by two factors, namely lexical frequency and word type of the nominal. The processing of literal and ironic sentences will be investigated using a self-paced reading design and the moving window paradigm (Just, 1982).

Method

Thirty-eight participants (mean age=24.21; sd=3.13; age range 19-31; 23 female and 15 male) took part in the experiment. They were all undergraduate students from the University of Kassel and received course credit for participating in the experiment. Prior to the experiment, the participants completed a questionnaire regarding personal information. All participants were self-reported native speakers of German and had corrected or corrected-to-normal vision. The participants were naïve with respect to the research question and hypothesis.

Material and design

The empirical focus of this study is on German. The experimental design was a between-items design with matched sets. The test material is comprised of 32 paired scenarios, i.e. a total of 64 experimental contexts. The paired scenarios consist of, on the one hand, a literal condition in which the speaker introduces a name-mentioning construction, whereas the second condition gives rise to a modalized reading, i.e. ironic interpretation of the sentence. The carefully selected target nominals are either noun compounds¹ or simple nouns. All target nominals are syntactically integrated into a sentence and are related to either a literal or an ironic meaning of the target sentence. The self-paced reading study exhibits a 2x2x2 design: CONSTRUCTION TYPE (NI vs. MOD), LEXICAL FREQUENCY (low vs. high), and WORD TYPE (simplicia vs. compounds).

Each condition was made up of eight sentences, out of which four contained the naming predicate *nennen* (‘call’) and four the predicate *bezeichnen als* (‘refer to as’).

¹ Verb-noun compounds and verbal compounds, which also appear frequently in NMCs, have not been the focus of in this SPR.

Prior to the experiment, two student assistants were asked to carefully read all experimental items and decide whether the setting of the context sentences was clearly giving rise to an ironic reading as opposed to a non-ironic reading of the respective name-informing counterparts. This procedure was further used to ensure contextual plausibility of the experimental items. It is important to note that it was ensured that the conditions were balanced with regard to presenting learning-new-words contexts to avoid systematic confounds. These learning contexts are preferred in NMC constructions, e.g. when a new word is introduced in a teaching situation between teacher and students or parents and their children. For this reason, learning contexts were also used in the modalizing conditions. In addition, all experimental items were checked for sentence plausibility prior to the experiment.

The material comprises 64 different context sentences that aim to set the situational context and trigger either a literal or an ironic interpretation. The overall sentence structure, as well as the sentence length of the introductory sentences, was comparable. The experimental items followed the pattern of context sentences followed by the target sentence (see Table 1).

Table 1: Schematized test design

Context sentences:			
NI construction		Mod. construction	
Der Besitzer der Weinkellerei erklärt die Besonderheiten von verschiedenen Weinen. ,The owner of the wine cellar explains the peculiarities of different wines.'		Kim berichtet in einer Mail von einem Treffen mit einem Kollegen, der verkorkten Wein servierte. ,Kim reports in an email about a meeting with a colleague who served bottled wine. '	
Mod. Target sentence:			
<i>So jemand</i>	<i>nennt sich</i>	<i>Weinkenner,</i>	merkt Kim an.
Someone like that	calls [call.REFL] himself/herself	wine connoisseur,	
Target 1	Target 2	Target 3	Spillover region/ reporting clause
Comprehension question			
Hat Kim ihre Mutter getroffen?			

NI Target sentence:			
<i>So jemand</i>	<i>nennt sich</i>	<i>Weinkenner,</i>	sagt Maria.
Someone like that	calls [call.REFL] himself/herself	wine connoisseur,	says Maria.
Target 1	Target 2	Target 3	Spillover region/ reporting clause
Comprehension question			
Besitzt der Mann den Weinkeller? ,Does the man own the wine cellar?'			
Ja / Nein ,Yes' / ,No'			

The target sentence consists of a name, a verb, and the target noun. For a greater variation in naming predicates, sentences with *nennen* ('call') have been divided into equal parts containing *nennt man* ('call') and *sich nennen* ('call.refl'). Crucially, the target noun was placed sentence-medially and was always either a compound or a simplicia. The frequency of the nominal was controlled with the corpus of the German language provided by the Leipzig Corpora Collection (LCC).² Please note that this paper uses the terms "high frequency class" and "low frequency class": A high frequency class stands for a low lexical frequency, and a low frequency class means that the target word is frequently used. The frequency of the target items ranged between the frequency classes 1-9 for a high lexical frequency and 16-24 for a low lexical frequency.

The target sentence was presented in italics to indicate the direct quotation in a spoken discourse situation. All paired scenarios contained the same target sentence so that 32 sentences could be presented to the participants without presenting any target noun twice.

All context sentences always contain a defining description of the target word. That way, the target nominals were syntactically integrated into the target sentence. Regarding the so-called 'SlideObjects' in E-Studio, each trial consisted of 4 slides:

1. a fixation asterisk
2. a context sentence followed by the target sentence and spillover region
3. a question mark
4. a comprehension question.

² <https://www.wortschatz.uni-leipzig.de/de>

In E-Prime 3, these slides were always presented following the order listed above. All other slides required a key press to proceed to the next slide. All text was presented in black font on a white background. As illustrated in Table 1, the context sentence was presented as a whole, while the target sentence was split up into three self-paced regions followed by the spillover region. For all reading regions, reading times were recorded.

Please note that the target sentence was shown in italics to highlight it as a direct quote. It was decided not to use any quotation marks for two reasons. First, a combination of italics and quotation marks might have been confusing for the participants. Second, the presence of quotation marks is not a defining characteristic of name-mentioning constructions. Although NMCs are frequently accompanied by quotes and have been proven to have acoustic correlates in oral speech (Schlechtweg & Härtl 2020), quotes are not a necessary part of this special type of quotational construction. According to Gutzmann & Stei (2011), the use of quotation marks is not compulsory in metalinguistic contexts, a view that is shared by De Brabanter (2023) who argues that quotation marks are optional. A recent corpus investigation revealed that the graphemic marking in NMCs is less frequent so that only 17% of NMCs involving the predicate *call* and 18.65% for the German equivalent *nennen* were accompanied by quotation marks (see Raue, 2022). As a result, quotation marks were not used in the stimulus material.

In the following section, the underlying hypotheses will be sketched for each target reading region.

Procedure

The experiment was conducted in a controlled setting in the language laboratory on the campus of the University of Kassel. All participants were invited to sit in front of a computer screen in a quiet setting. The experiment lasted for approximately 20 minutes.

The experiment was conducted using the E-Prime 3.0 software for psycholinguistic experiments (runtime version 3.0.3.80; Psychology Software Tools, Pittsburgh, PA 2016). To create the experiment, I adapted the code and experimental design using a sample Moving Window experiment as provided on the PST website, which takes sentences (or phrases) and breaks them into several windows. Notably, the context sentence was visually presented in one line as a whole, while the target sentence and spillover were presented in the line underneath.

In E-Studio, I created two sub-experiments called *GroupA* and *GroupB*. Each experiment contained three practice sentences and 23 target sentences. The experimental design was a within-subject design as all subjects were exposed to all conditions. To avoid possible effects of presentation order, the list of items was presented in different random orders to the participants (Gibson & Fedorenko, 2013).

The experiment started with two slides that presented the instructions to the participants in which they were encouraged to read the sentences at their own speed and were offered the opportunity to ask questions after reading the

instructions and also after completing a short trial. The practice round consisted of 3 sentences with two items giving rise to a modalized interpretation and one literal reading.

The input device for the self-paced reading experiment was restricted to the keyboard with the following keys: the SPACE button, and the button with the number '1' and '9'. The keys were labelled with a 'WEITER' ('NEXT') on the space button, 'JA' ('YES') on the key with the number '1', and a 'NEIN' ('NO') on the number '9'. Between each of the trials, a fixation asterisk was presented for 2000ms in the centre of the screen.

The text was displayed in black on a white screen. Further, the stimuli were aligned on each slide. Crucially, the slide with the target stimulus contained multiple *SlideObjects* in order to be able to present the target sentence, i.e. the direct quotation, in italics. This way, a smaller *TextDisplay* could be used which has the advantage of improving the timing (Vendonschot et al. 2019: 31).

The comprehension accuracy was measured for each sentence. As the target sentence was split up into different individual attributes, the reading times (RTs) were recorded between the key presses and measured in milliseconds (ms).

Hypotheses

The hypotheses were based on the three different target regions. Identical reading times were expected for i) READING TIME 1 for a) *so jemand(en)* and b) *so etwas*; and ii) for READING TIME 2 and the predicates a) *nennt man* ('call') and b) *nennt sich* ('call.refl') and c) *bezeichnet man als* ('refer to as'). For READING TIME 3, longer RTs were expected for a modalized reading; a low lexical frequency was expected to give rise to faster RTs in modalizing constructions; and compounds were hypothesized to be processed faster in name-informing sentences.

Analysis & Discussion

Prior to the statistical analyses, the raw data was prepared using E-Merge to combine the data files and E-DataAid3 to filter and export the data. In total, the data consists of 1216 individual data points (38 subjects x 32 cases per subject). As a first step, I examined the responses to the comprehension question. The threshold of accuracy was set to 70% per subject, and the analysis revealed that all subjects met the requirement. There were 127 incorrect responses across the conditions, making up 10.44% of incorrect responses in relation to all responses. Data points of target sentences to which the comprehension question was answered incorrectly were filtered out and not considered in the statistical analysis. As all subjects reached the accuracy threshold for the comprehension question, the data points were not excluded from the analysis of READING TIME 1 and READING TIME 2.

Furthermore, understanding and correctly reading the context sentence was crucial for investigating the difference between an NI and MOD reading. Therefore, it was decided

to remove all data points with a reading time lower than 2000ms. As a result of this restriction, a total of 11 data points were excluded from all further statistical analyses. After removing these data points, the lowest RT was found in the condition labelled as MODlowS_nm with a mean of 4355.16ms and the longest RT in the condition NIhighS_nm with a mean RT of 14048.1ms.³ In addition, the Target condition was checked for outliers using the z-score. The threshold was set to the recommended standard deviation of plus/minus two from the overall mean (cf. Loewen & Plonsky, 2016). These data points were regarded as extreme values and removed prior to the analysis. Only one subject had significantly longer RT with a mean of 22461ms (sd=19450) across all conditions (z-score=2.14).⁴ In addition, all individual items were also checked for using the z-score. None of the items had to be removed as all data points had a standard deviation of less than plus/minus 2 from the overall mean (723.71).⁵ As no outliers were detected in the carefully selected item types, they were treated as equally functioning conditions and were not further investigated in the following analyses.

Above this, the statistical analysis of the spillover region, for the mean RT ranged between 709.1ms and 1829ms, will not be reported here in detail. All statistical analyses were analysed in R (R Core Team 2021).⁶

Results

Reading Time 1

The statistical analysis for READING TIME 1 was divided into the reading time measured for a) *so jemand/en* ('someone like that') and b) *so etwas* ('something like this'). Data points with an RT under 2 sec in the preceding context sentence had been discarded for all statistical analyses. The results of the one-way ANOVA for READING TIME 1 did not reveal significant differences between the condition for the phrase *so etwas*. As for the 'so jemand/en' (someone), the statistical analysis also confirmed that there was no difference across the conditions. These results are consistent with the hypothesis and show that the reading times are similar across the conditions.

Reading Time 2

The following analysis investigates whether the 3 predicates a) *nennt man* [nm] and b) *nennt sich* [ns], and c) *bezeichnet man als* [bez] reveal a difference in reading time (see Table 2).

³ MODlowS_nm = modalized reading with a low frequency class, simplicia and the predicate *nennt man*
NIhighS_nm = name-informing reading with a high frequency class, simplicia and the predicate *nennt man*

⁴ The z-score ranged between 0.22 and 1.15; the mean RT was 967.4ms for the target nominal.

⁵ The z-score for item types ranged between 0.239 and 1.294.

Table 2: Linear Model for the predicates

	Estimate	Std. Error	t value	Pr(> t)
(Intercept)	1.280e+02	1.999e+01	6.404	1.53e-09 ***
bez	1.211e-01	4.215e-02	2.874	0.00459 **
nm	1.427e+00	1.592e-01	8.965	6.71e-16 ***
ns	5.423e-01	4.250e-02	12.761	< 2e-16 ***
bez:ns	-1.653e-04	8.605e-05	-1.921	0.05645
bez:nm	8.803e-04	3.401e-04	2.589	0.01050 *
ns:nm	-3.443e-03	2.581e-03	-1.334	0.18399

The analysis revealed no significant difference in RT between the predicates *nennt man* and *nennt sich*. However, a statistically highly significant difference could be found between the predicates *bezeichnen als* and *nennt man*. In both conditions, the statistical analysis revealed that the RT for *bezeichnen als* is longer as compared to the *nennen* predicate.

Reading Time 3

This section presents the results of the analysis of READING TIME 3, i.e. for the target nominal. The data presented here includes only analyses of data points that did meet the criteria of the reading time of the context sentence with at least 2 sec. In addition, one outlier participant was also removed prior to the data analysis. For the first analysis of a difference in the interpretation, i.e. the modalized and name-informing reading, the results showed that there was no significant difference in reading times between the two passage types, $t(434) = 0.37684$, $p = 0.7065$. Despite this, the mean RT for modalizing interpretations was longer (971.21ms; $SD=684.25$) than for conditions with a literal interpretation (962.75ms; $SD=611.27$).

Second, the difference between the WordType, i.e. a possible difference between simplicia and compounds, was investigated. The statistical analysis proved a significant effect $t(434) = 6.1361$, $p = 1.907e-09$. The mean RTs for compounds measured 1055.88ms ($SD=696.03$) and 880.77ms ($SD=583.65$) for simplicia, revealing that compounds take longer to be processed.

As a third step, it was investigated whether the data showed effects between a low and a high lexical frequency and the statistics revealed no significant effect, $t(433) = 1.5496$, $p\text{-value} = 0.122$.

⁶ Please note that this study is work-in-progress and part of my PhD thesis with the working title "Reference to names. An empirically based study on metalinguistic uses of names of lexicalized concepts" in which all experimental items will be listed and all final statistical analyses will be reported, using linear mixed effects models with the lme4 package (Bates & Machler & Bolker & Walke, 2015).

In addition to this, the descriptive statistics for compounds (see Figure 1) and for simplicia (see Figure 2) show that the word type has an influence on the reading times.⁷

Figure 1: Interpretation & Frequency for compounds

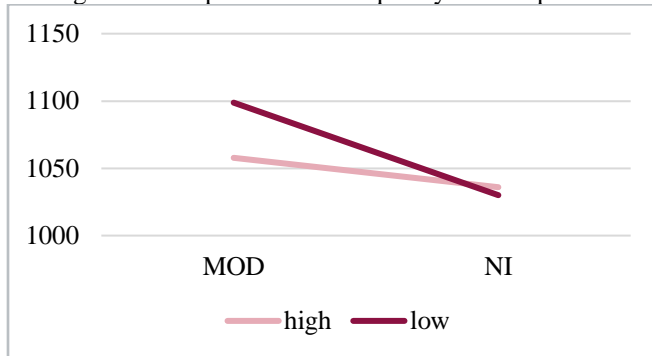
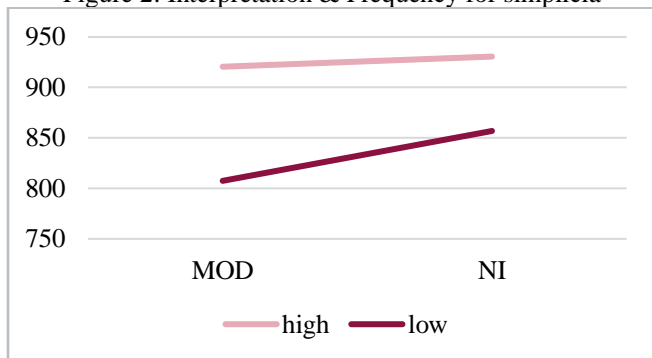


Figure 2: Interpretation & Frequency for simplicia



In general, there were longer mean RTs for (i) simplicia in name-informing constructions and (ii) compounds in modalizing constructions. In other words, the mean RTs confirm that compounds are preferred, i.e. processed faster, in literal conditions, while there is a reversed correlation for simplicia in modalizing interpretation.

Discussion

The herewith presented self-paced reading experiment investigated whether lexical frequency and complexity of the mentioned nominal affects the processing of name-informing and modalizing constructions in German sentences. The reading time was investigated at three different positions in the target name-mentioning construction. No reading time differences were detected for the first reading region for *so etwas* ('something') and *so jemand/en* ('someone'). These results are in line with the hypothesis.

For reading time 2, the analysis revealed a statistically significant difference between *bezeichnet man als* and the two predicates *nennt man* but not for the reflexive form *nennt sich*.

The main analysis for the target nominal revealed that there was statistically no significant difference between the

literal and non-literal conditions. Further, there was no statistically significant difference in RTs between a low and high lexical frequency. Despite this, the statistically significant difference between compounds and simplicia is most likely grounded in the fact that the target compounds have more syllables than the simplicia. When investigating the complex interplay between WordType, Frequency, and Interpretation, the mean RTs illustrated in Figure 1 and Figure 2 indicate that compounds have a tendency for literal conditions while simplicia are easier processed in modalizing interpretations. This finding implies that compounds are inherently well-suited for introducing names of lexicalised concepts in literal conditions (cf. Härtl, 2016; Raue, 2020). Conversely, high frequent simplicia as in *Someone like that calls himself an expert* typically give rise to an ironic meaning.

Conclusion

It has been shown that name-informing constructions can give rise to a literal interpretation, i.e. when the addressee is informed about a lexicalized name, and second, to a non-literal, ironic reading. The self-paced reading experiment revealed that the processing of reading times of non-literal conditions takes longer, which is reflected in the difference in reading times for the target word. Importantly, the mean RTs confirm that the interpretation of the respective name-mentioning construction interacts with both the word type of the target word as well as with the lexical frequency. To conclude, the current data supports theories of irony that predict longer processing for ironic contents, such as the 'standard pragmatic view' by Grice (1975).

Future research will aim at investigating the different readings of NMCs using eye-tracking methodology, including the absence and presence of quotation marks in the written mode as an additional factor. In addition, the importance of reader-related factors, including the working memory capacity and Theory of Mind, have been proven to influence the processing of irony (cf. Olkonemi, 2018). These factors will also be taken into consideration in future research on the nature of NMCs.

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⁷ Please note that the mean RTs illustrated in Figure 1 and Figure 2 are given in milliseconds.

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