Not Just Semantics: Word Meaning Negotiation in Social Media and Spoken Interaction

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Abstract

This paper outlines an ongoing research project with the goal of of investigating how meanings of words (and phrases) are interactively negotiated in social media and in spoken interaction. This project will contribute to a comprehensive theory of word meaning negotiation.

1 Introduction

This paper outlines the project *Not Just Semantics: Word Meaning Negotiation in Social Media and Spoken Interaction* (VR 2022-02125), a project funded by the Swedish Research Council, that started in 2023 and currently planned to continue until 2026. The goal of the project is to investigate how meanings of words (and phrases) are interactively negotiated in social media and in spoken interaction. This project will contribute to a comprehensive theory of word meaning negotiation, which will characterise the phenomenon empirically and provide rigorous quantitative and qualitative analysis (including formalisation).

2 Purpose and aim of the project

While we may often take the meanings of our words as a given, the meanings of words (and phrases) are in fact frequently interactively negotiated by participants in linguistic interaction (Ludlow, 2014; Myrendal, 2015). Such Word Meaning Negotiations (WMNs) can be used in resolving misunderstandings, but can also be used rhetorically by interlocutors, to advance their view on some (possibly controversial) matter and to make their claims more plausible. Currently, WMN is an underexplored area, and we believe there is an opportunity for groundbreaking research with far-reaching scientific and practical benefits that this project will seize on.

The excerpts below are taken (and translated into English) from a Swedish online discussion forum. The posts are made by different participants in the discussion. The discussion concerns whether or not piercing the ears of young children is morally acceptable, or if it constitutes (child) abuse (sv. "(barn)misshandel").

1. Piercing the ears of young children (...) is abuse towards another human being! (...)
2. It isn't child abuse to pierce someone's ears. (...)
3. Of course it is abuse when you subject the child to unnecessary pain that they haven't asked for.
4. Clearly ABUSE to pierce the ears of young children! (...) - you inflict pain upon the child and a physical change which the child herself has not chosen and which cannot be made undone.

In addition to arguing for or against ear piercing in young children, participants are debating the meaning of 'child abuse', arguing about what the phrase means in order to support their overall claim for or against ear piercing. They do this by discussing whether or not "ear piercing" should count as a case of "(child) abuse" (1, 2 and 4 above), by offering full or partial definitions of "child abuse" (3 and 4 above), and in various other ways. WMNs can also concern politically charged phrases such as 'climate denier' (Sw. 'klimatförnekare'):

1. What do you mean by denier? Do you mean people who deny that we have an acute climate crisis (...)?
2. To be critical against alarmists is not the same as being a denier

We refer to discussions like these, where meanings are more or less explicitly negotiated, as Word Meaning Negotiations (WMNs). WMN occurs in many types of linguistic interaction, including everyday spoken conversation and social media interaction (Myrendal, 2015, 2019).

Understanding word meaning negotiation will contribute to our understanding of the social and normative nature of meaning, and the interactive processes involved in establishing shared meanings. Knowing more about WMN would also help us understand the role it plays in everyday life, as well as in politically or emotionally charged disputes in social media. The project will contribute towards a comprehensive theory of word meaning negotiation, which will characterise the phenomenon empirically and provide rigorous quantitative and qualitative analysis (including formalisation).

The project focuses on the following fundamental questions:

- What are the conversational strategies used in WMNs?
- How can we model how meanings are modified in WMNs?
- How are WMNs connected to arguments on controversial issues?
- What differences are there between social media and spoken interaction w.r.t. WMN?

3 State-of-the-art

Work in psycholinguistics has shown that speakers negotiate word choices and domain-specific meanings; see e.g. Clark and Gerrig (1983), Brennan and Clark (1996), Healey (1997), Pickering and Garrod (2004) and Mills and Healey (2008). Researchers in Conversation Analysis (CA) have studied phenomena such as disagreement and repair in conversation (Sacks, 1973; Kitzinger, 2012). Repair has also been studied from a computational perspective Purver et al. (2003).

Research on second language acquisition (Nakahama et al., 2001; Pica, 1994; Varonis and Gass, 1985) has identified a type of meaning negotiation that occurs when there is insufficient understanding between interlocutors regarding the meanings of particular words. This type of 'meaning negotiation' mostly refers to conversational repair.

Some types of Discourse Analysis, such as Critical Discourse Analysis (Fairclough, 2013), investigate how societal power relations are established and reinforced through language use. Walton (2001) discusses the role of definitions in argumentation, focusing on legal and political contexts.

Work in the philosophy of language (Ludlow, 2014) describes how discussions about the precise meanings of words like "planet", "person" and "rape" have recently entered the media spotlight. Often, different positions on controversial topics are aligned with views about the meanings of words. Ludlow mostly studies monological texts published in traditional media, but stresses the significance of studying how meaning is negotiated in interaction.

Work within computational linguistics related to social media and spoken interaction has addressed a vast array of topics, including lexical semantic change change (Tahmasebi et al., 2018), argument mining for online interactions (Ghosh et al., 2014), automatic detection of disagreement in online dialogue (Misra and Walker, 2017; Allen et al., 2014), automatic detection of emotions like sarcasm or nastiness in online conversation (Justo et al., 2014; Lukin and Walker, 2017) as well as classification of stance in online interaction (Sridhar et al., 2014; Walker et al., 2012). However, none of these studies have focused on the role played by meaning negotiation in relation to argumentation or disagreement in online communication.

All the research cited above is relevant and will be used to inform the approach developed in the present project. However, none of the approaches listed above have focused precisely on WMN as defined here and studied it using the combination of methods that we propose.

4 Significance and scientific novelty

Mainstream work on empirical and formal studies of dialogue and meaning has not, until recently, taken meaning negotiation seriously. This may in part be connected to an (explicit or implicit) assumption that meanings of words can be treated as static. As a result, there is to date very little work on quantitative and qualitative studies of naturally occurring WMNs.

In historical linguistics, semantic change has been studied "from a distance", focusing on slow, long-term and widespread changes. However, this cannot be the whole story. In the end, negotiation of meanings must take place in concrete instances of interaction (spoken or written) within a language community.

We also believe that understanding the process of WMN is essential to understanding the social nature of linguistic meaning. This touches on long-standing debates in linguistics and philosophy of language, such as the possibility of a private language, the normativity of language, the limits of meaning variation in language, and to what extent

WMN category	count	%
WMN: non-understanding	121	4,2
WMN: disagreement	6	0,2
WMN without trigger	40	1,4
WMN: other	7	0,2
Non-pursued WMN	2	0,07
Non-WMN clarification req.	23	0,8
Reference/named entity	23	0,8
Unclear	7	0,2
Multiple categories	9	0,2
No WMN	2619	91,7

Table 1: Preliminary annotation of 2857 potential WMNs (found using search expressions such as "what do you mean by") from the spoken section of the BNC

language is to be regarded as a mathematical, psychological or social entity. In WMNs, we can observe the social-normative dimension of language and meaning being played out in plain sight. By developing methods for finding WMNs we enable an empirical and data-driven approach to the study of this dimension of linguistic meaning. By developing and formalising a theory of WMNs we aim to give a precise account of the interactive dynamics involved in the emergence, perpetuation and variation of linguistic meaning in a speaker community over time.

Apart from theoretical and empirical work, this project will also develop automatic methods of detecting and analysing WMNs. Being able to detect, analyse and understand WMN has a range of potential applications. By better understanding the role of word meaning negotiations in discussions and controversies, we may gain insight into how opinions of individuals and communities influence (and are influenced by) the meanings we ascribe to words and expressions, and how opinions and word meanings interact over time.

5 Preliminary and previous results

Myrendal (2015, 2019) is the main starting point for the present project, and describes how word meanings are negotiated in social media, especially focusing on online discussion forum communication. Online discussion forums offer a particularly suitable material for studying naturally-occurring WMNs. These discussions typically take place between strangers who discuss a wide variety of more or less controversial topics, such as abortion, gender roles, and immigration policies.

Myrendal concludes that a WMN occurs when a discussion participant remarks on a word choice of another participant, thus initiating a meta-linguistic discussion in which a particular word is openly questioned and its meaning is up for negotiation. Myrendal distinguishes two main types of WMNs. NONs (non-understanding WMNs) comprise WMN sequences that are caused by insufficient understanding of a particular word. The second type, called DINs (disagreement WMNs), encompass sequences that originate in disagreement between participants regarding the meaning of a word and the way it is used in the discussion context.

Both NONs and DINs typically start off as a series of turns following a specific interaction pattern. Initially, a word is used by a participant which is remarked upon by another participant in a later turn, indicating that there is some kind of problem with regards to the meaning and/or use of the word. From that point in the interaction, the meaning of the word is up for negotiation and subsequent turns devote their attention to negotiation of word meaning.

P1: I'm anti-sexist, which means that I'm against sexism in society. Ask me anything!
P2: What do you mean by the concept of "sexism"?
P1: That people are treated differently because of their gender.

Note that there needs to be a meta-linguistic shift that turns the focus of the conversation from being on topic to being on language in order for any conversation to turn into a WMN sequence. This shift is invited in the second turn, and the shift occurs in the third turn. On this basis, Myrendal (2015) develops a taxonomy of dialogue acts utilised by participants in WMN sequences. (Only selected parts of the taxonomy are presented here.)

- **Explicification** is a dialogue act used to introduce a definition-like component to the negotiated trigger word.
- **Exemplification** is a dialogue act that provides examples of what the trigger word can mean, or usually means, in a situation other than the current discussed situation.
- **Contrasting** is a dialogue act that positions the trigger word against another word, typically highlighting a similarity or difference between the two contrasted words.

- **Meta-linguistic clarification requests** are used to elicit more information about the perceived meaning of the trigger word.

Myrendal offers some quantitative results about the frequency of WMNs in online discussion forums, but these results are conditioned by the specific methods used to detect WMNs, and limited to Swedish discussion forum data. In the present project, we wish to take a more comprehensive approach to finding and classifying WMN sequences, thus enabling stronger quantitative claims.

We have previously have worked on formalisation of the WMN strategies identified by Myrendal, describing how they relate to updates of speakers' takes on meanings (Larsson and Myrendal, 2017; Noble et al., 2019). The present project will provide a large scale formal description of WMNs and their effect on word meanings.

6 Project Description

We take a dialogical perspective on language and communication in which linguistic meaning is viewed as a collaborative and interactive accomplishment between interlocutors (Clark, 1996; Linell, 2009). From this perspective, words possess flexible semantic qualities ("meaning potentials") that can be used in and across contexts to create situated meaning (Norén and Linell, 2007).

Methodologically, we will use a mix of methods to capture the complexities of the WMN phenomenon: corpus linguistics, quantitative analysis, and qualitative analysis (including formalisation). More precisely, we will use the following methods:

- Collecting a corpus of relevant social media and spoken interactions
- Identifying, classifying and annotating WMNs
- Developing automatic methods for detecting and classifying WMNs
- Quantitative analysis of WMNs
- In-depth qualitative analysis

The project is divided into four work packages, as follows:

WP1: Corpus collection: We will select relevant data of Swedish and English in interactive settings. Potential WMN sequences will be identified and retrieved using search expressions identified in previous research. While the precise search expressions will of course differ between languages, we expect similar overall patterns to occur in both Swedish and English. Table 1 presents preliminary results categorising dialogues retrieved from the spoken BNC with this method.

WP2: Detection and annotation Based on the analysis of dialogue acts involved in WMN in Myrendal (2015) and Noble et al. (2019), we are currently developing an annotation schema along the lines of Allen and Core (1997). The schema will go through a cycle of reliability testing and adjustment until satisfactory levels of reliability and depth of analysis have been reached. Data will be annotated by students who have received a brief explanation of the coding schema.

We will also develop and evaluate new techniques for detection and classification of WMN sequences. This work will build on Myrendal (2015) and on work on automatic detection of miscommunication related phenomena in dialogue (Purver et al., 2018). We will also be trying out LLMs on the task of detecting and classifyinng WMNs.

WP3: Quantitative analysis This WP aims to answer fundamental questions such as how common WMNs are. Using annotated corpus materials, we will investigate the overall frequency of WMNs, the relative frequency of the different negotiation strategies, and the dependence of these frequencies on contextual factors such as the type of social media platform and the general orientation of the forum. Some very preliminary frequency results from the BNC are shown in 1.

WP4: Qualitative analysis For the analysis of WMN strategies, we will use qualitative methods of interaction analysis influenced by and adapted from CA Hutchby and Wooffitt (2008).We will also continue work on formalisation of how various WMN strategies relate to updates of speakers' takes on meanings, using TTR (Cooper, 2023) which enables capturing rich dynamic meanings. In addition to providing detailed analysis, formalisation is a first step towards implementation of WMN capabilities in artificial agents (Schlangen, 2016).

Finally, we will explore how WMNs are connected to rhetorical argumentation, by examining to what extent and in which ways topoi play a role in WMNs (Breitholtz, 2020). Breitholtz suggests that the interpretation of word meaning is closely connected to reasoning where participants draw on topoi, rules of thumb for reasoning. We will explore the idea that topoi provide a link between WMNs and argumentation.

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