

# Evidence for Grounding in Polarised Gender Debates on YouTube

Andressa Costa<sup>1</sup>, Birgit Rapp<sup>2</sup>

<sup>1</sup>Department of Science Communication, Karlsruhe Institute of Technology, Karlsruhe, Germany  
[andressa.costa@kit.edu](mailto:andressa.costa@kit.edu)

<sup>2</sup>English Department, University of Tübingen, Tübingen, Germany  
[birgit.rapp@uni-tuebingen.de](mailto:birgit.rapp@uni-tuebingen.de)

**Abstract** This paper addresses the challenge of grounding—establishing shared knowledge and beliefs—in highly polarised online debates on sex and gender, where platform affordances and psychological biases foster defective contexts and uncommon ground rather than cooperative communication. A multiphase qualitative discourse analysis of 609 comments from two opposing German YouTube videos (one conservative and one science-oriented) was employed, deductively coding linguistic markers from pragmatic theory (e.g. negation, directives and questions) and inductively identifying novel markers such as fixed assertions. Question types were examined for their role in signalling alignment or conflict. The analysis reveals that, in these polarised environments, grounding is dominated by 'negative evidence' — markers of misalignment, conflict and stance divergence — rather than the collaborative mechanisms described in canonical models. A distinct asymmetry emerged between the datasets: the conservative thread displayed a high frequency of refusal to negotiate common ground, whereas the science communication thread showed no instances of establishing common ground, despite containing a higher number of attempts at negotiation. Furthermore, interrogative forms predominantly functioned as tools for signalling conflict (e.g. incredulity questions), rather than for seeking information. This confirms that interactional resources are adapted to express disagreement. These findings provide empirical evidence for 'grounding under epistemic incompatibility' — a mode of interaction in which participants exhibit recognisable grounding behaviours, but without any trajectory towards mutual understanding. This extends grounding theory beyond its cooperative foundations, demonstrating that polarised online discourse actively produces and sustains uncommon ground through systematic linguistic means, rather than merely lacking common ground.

**Keywords** Common Ground, Grounding, Polarisation, Science Communication, Online Interaction, Pragmatics, Discourse Analysis

## 1 Introduction

Social media platforms have evolved into central arenas for shaping public opinion, but they are not purely deliberative; rather, they promote the systematic interplay of rational argumentation and emotional, identity-based discourse (Bucher 2020, p. 124). Within this environment, scientific topics are often discussed in highly emotional ways, which facilitates the mobilisation and radicalisation of communities (Könneker 2020, p. 25). Discussions about sex and gender are a particularly salient case because they sit at the intersection of biological science, social identity and political ideology. Consequently, they generate intense contestation both within and across divided communities. This raises the central question of how common ground is established, negotiated or rejected in polarised online discussions about scientific topics, and which linguistic markers participants use to signal alignment or divergence.

Research on common ground and grounding has provided a robust theoretical foundation for understanding the mechanisms of successful communication. Clark (1996) proposed that common ground — the shared knowledge, beliefs and assumptions that participants recognise they have (*ibid.*, p. 92) — is a fundamental prerequisite for human language use. Clark and Brennan (1991, p. 131-133) further demonstrated that grounding — the collaborative process through which participants reach the mutual belief that they have understood one another sufficiently for the purposes of the current situation (*ibid.*, p. 129) — relies on positive evidence, such as acknowledgements, relevant next turns and continued attention. However, this model was primarily developed with cooperative, face-to-face communication in focus. In such situations, participants share a physical context and can monitor each other's attention and reactions in real time. They are also generally assumed to have a mutual interest in successful communication. Subsequent theoretical work has begun to address what happens when the cooperative assumptions underlying these models break down. Stalnaker (2002, p. 717) introduced the concept of 'defective contexts', which are situations in which participants' presuppositions fail to align. Peet (2021, p. 194) argued that such contexts are far more prevalent and difficult to resolve than previously thought, particularly in situations involving deep social or conceptual divisions. Macagno and Capone (2016) complemented these accounts by proposing the notion of 'uncommon ground', which describes pragmatic strategies such as 'polyphony' that enable speakers to navigate contexts in which shared assumptions are absent or contested.

Although these theoretical advances have expanded our understanding of how communication can succeed or

fail under conditions of presuppositional misalignment, empirical research into grounding in actual polarised online interactions is still limited. Fetzer and Fischer (2007) provided a comprehensive typology of lexical markers of common ground, including discourse particles, modal particles, deictic expressions, metalinguistic markers and temporal connectives. They demonstrated the multifunctional role of these markers in signalling which information is assumed to be shared and which requires updating. More recently, Diedrichsen (2023, p. 107) extended this line of research to digital environments, conceptualising emergent common ground in online discussions as dynamic, particularised knowledge that is constructed in the situation of interaction. In anonymous online settings where participants lack shared socio-cultural backgrounds, Diedrichsen identified formal markers — such as negation, disclaimers, directives, irony and addressees — that signal misalignment and indicate impending updates to the shared state of knowledge. However, Diedrichsen's study was based on a single YouTube thread concerning a relatively specific cultural phenomenon. The question of how these grounding processes operate in highly polarised scientific debates, where ideological commitments and epistemic frameworks are fundamental issues, remains unanswered. Furthermore, despite their clear relevance as tools for seeking information, challenging presuppositions, and signalling stance, the role of questions as interactional resources for grounding in polarised online discourse has received little dedicated attention.

This study examines the linguistic markers and processes of grounding in polarised YouTube comment threads on sex and gender, addressing a gap in the literature. Drawing on comment data from two German-language YouTube videos presenting opposing views — one from the conservative media outlet *Junge Freiheit*, and one from the science communication platform *MAITHINK X* — the study combines a deductive framework of grounding markers, drawn from specialist literature (Clark and Brennan 1991; Fetzer and Fischer 2007; Diedrichsen 2023), with an inductive, qualitative analysis of the comments. Based on Diedrichsen's (2023) model, the study identifies four sources of emergent common ground and analyses their formal markers. Additionally, the study systematically examines the role of various question types, such as information-seeking, rhetorical, leading, incredulity and follow-up questions, as interactional resources for establishing common ground and signalling uncommon ground. The aim is twofold: first, to provide a fine-grained empirical account of how grounding operates across different functions — establishing, negotiating, negating, and refusing to negotiate common ground — in polarised online discourse; and second, to assess the extent to which existing grounding theory, developed for cooperative communication contexts, can account for the dynamics observed in structurally defective, platform-mediated interactions. Our hypothesis is that, in these contexts, grounding is dominated by markers of misalignment and conflict rather than the collaborative mechanisms described in canonical grounding models. We also hypothesise that the discursive framing and orientation of source content shape the distribution and function of grounding practices across discussion threads. This study thus contributes to a more nuanced understanding of communicative dynamics in polarised online spaces, offering empirical grounding for extending pragmatic theory to digitally mediated, conflict-driven interactions.

The remainder of this paper is organised as follows. Section 2 provides the theoretical background by introducing the key concepts of common ground, grounding, defective contexts and uncommon ground (Section 2.1). It then discusses the specific communication conditions on social media platforms that influence grounding processes (Section 2.2). Section 2.3 reviews the existing markers for grounding in the literature, covering positive evidence, lexical markers of common ground and markers of emergent common ground in online discussions. Section 2.4 concludes with an account of the role of questions in grounding. Section 3 describes the methodological approach, including the data used and the multiphase qualitative analysis conducted. Section 4 reports the results, organised according to the four grounding functions identified in the data: establishing, negotiating, negating and refusing to negotiate common ground. Section 5 discusses the findings considering existing grounding theory and addresses the theoretical contributions of the study. Section 6 concludes with a summary of the key insights and their implications for pragmatic theory and the study of digitally mediated discourse. It also acknowledges the limitations of the research.

## **2 Theoretical Background**

### **2.1 Key concepts**

This section focuses on four key concepts that are fundamental to understanding communication processes and their potential failure, namely common ground, grounding, defective contexts and uncommon ground. Together, these terms provide a coherent theoretical framework that explains some mechanisms of successful communication, as well as the causes of miscommunication. While common ground describes the shared knowledge base that enables communication in the first place, grounding highlights the specific mechanisms through which this common ground is established and maintained. Defective contexts and uncommon ground, on the other hand, illustrate what happens when these fundamental prerequisites are not met or fail to be met. Systematic consideration of these four concepts enables an understanding of the conditions for successful communication and the analysis of the dynamics that lead to communication problems and communicative blockages in polarised discourses.

**Common ground** is a fundamental prerequisite for human language and communication, encompassing

individual and social processes (Clark 1996). It comprises the body of knowledge, beliefs and assumptions that the participants of a conversation or interaction believe they share. This shared background consists of information that is treated as self-evident or taken for granted within a conversational context. Crucially, common ground is characterised by its reflexive nature: it constitutes a form of mutual self-awareness whereby two or more people are aware not only of the information they themselves possess, but also of the fact that the others share this awareness (Clark 1996; Stalnaker 2002). Rather than being static, common ground is continuously updated and adapted throughout an interaction. According to Clark's principle of justification, people only treat a proposition as common ground when they believe they have a proper shared basis for it — evidence derived from joint perceptual experiences, joint actions, or other mutually accessible information (Clark 1996, p. 96). Without such a foundation, communication would be virtually impossible, as participants would be unable to determine which information could be presupposed and which should be made explicit. This conceptualisation underscores that communication, including the polarised debates observed on social media, rests on the continuous negotiation and maintenance of common ground. Understanding how common ground is negotiated naturally leads to the question of what happens when this process breaks down—namely, when participants' assumptions about shared knowledge and beliefs diverge, resulting in a defective context.

Stalnaker (2002, p. 717) defines non defective context as “a context in which the participants' beliefs about the common ground are all correct”. Therefore, the presuppositions of the participants are aligned. A **defective context** exists when the presuppositions of participants fail to align: what one speaker takes for granted as shared background differs from what their interlocutor assumes is mutually accepted (Stalnaker 2002, p. 717; Peet 2021, p. 193). Stalnaker (2002, p. 717-719) suggested that such contexts, when recognised by one of the participants, would be typically corrected through some corrective action such as correction, accommodation or pretence due to participants' shared interest in successful communication. In contrast, recent work by Peet (2021, p. 194-205) challenges this optimistic picture, arguing that defective contexts are in fact ubiquitous and often resistant to repair, especially in situations involving deep social or conceptual divides, where attempts to align presuppositions can fail or are even impossible to achieve. In polarised communication situations, this leads to participants operating from different, often incompatible starting points, making understanding difficult or impossible. In such settings, efforts to establish genuine common ground may encounter hermeneutical impasses, as deeply held background beliefs resist correction and drive persistent miscommunication or hermeneutical injustice (Peet 2021, p. 195-196). The defective context manifests itself in misunderstandings, failed references and the inability to establish a viable common basis for discussion, which can ultimately reinforce and solidify polarisation.

The concept of **uncommon ground** (Macagno and Capone 2016) refers to situations in which the presuppositions of interlocutors usually differ. This phenomenon is often caused by presupposition triggers, which encourage certain information to be considered part of the common ground. However, when these triggers result in presuppositions that contradict stronger assumptions or explicit denials, uncommon ground emerges (ibid., p. 152). The conflict between two competing points of view — one resulting from the presupposition trigger and the other contradicting the presupposed content — leads to what Macagno and Capone (2016, p. 156) term presupposition suspension. However, uncommon ground is not merely a communicative failure, but rather a linguistically marked phenomenon that can be identified. As Diedrichsen (2023, p. 113) notes, it tends to manifest through expressions such as 'actually', 'though', 'but', 'in the first place', or quotation marks, all of which indicate that a speaker is distancing themselves from a particular expression or presupposition. These markers indicate that what was assumed to be shared common ground is in fact contested or rejected, thereby requiring an update to the common ground of the conversation.

Macagno and Capone's model of uncommon ground serves both as an extension and a complement to Stalnaker's and Peet's frameworks of defective context. Whereas Stalnaker (2002) and Peet (2021) primarily focus on the alignment or divergence of presuppositions, defining defective contexts as instances of such misalignment, Macagno and Capone (2016) emphasise how communication proceeds when these presuppositions remain genuinely unshared, are suspended, or are overtly contested. In this approach, instances of uncommon ground can be seen as a subtype of defective context, yet they are analysed differently. Rather than treating misalignment as something to be repaired (Stalnaker 2002) or as a pervasive obstacle to understanding (Peet 2021), Macagno and Capone (2016) examine the pragmatic strategies—such as polyphony—that allow speakers to navigate and sometimes exploit contexts absent of, or hostile to, genuine common ground. Through polyphony, speakers can attribute presuppositions to different voices, distancing themselves from specific commitments and thereby sustaining communication even under deep contextual defectiveness (ibid., p. 161-166). Examining these strategies for managing uncommon ground raises the question of what mechanisms allow communication to proceed at all under such conditions. The concept of grounding is central to this.

According to Clark and Brennan (1991, p. 128), **grounding** is the fundamental mechanism by which participants establish common ground during communication. It is defined as the collective process involving explicit markers and interactional signals through which participants attempt to reach a mutual understanding of what has been said, sufficient for their current purposes. Only when utterances are grounded — that is, recognised as understood and accepted — can they become part of the common ground essential for successful

communication. This process is inherently collaborative and varies significantly across different communication situations and media, such as face-to-face versus digital interactions (Clark and Brennan 1991).

Grounding becomes particularly crucial in situations characterised by divergence. This occurs when participants' versions of common ground become misaligned, generating conversational friction and, potentially, polarisation. Such divergence may stem from uncommon ground, where assumptions are treated as shared but are not actually mutually held, or from the inherently egocentric and imprecise nature of linguistic communication, wherein egocentric assumptions and linguistic imprecision can contribute to persistent differences in meaning (Diedrichsen 2023; Peet 2021). In online interactions, grounding is especially important due to the increased risk of misinterpretation and conceptual variation, which is often made worse by the limitations of digital media. In these cases, grounding entails formal markers that alert addressees to mismatches in beliefs or knowledge bases and signal that unknown or unexpected information is forthcoming (Diedrichsen 2023, p. 105).

## 2.2 Communication in social media

Grounding is not a medium-independent process, but changes with the purpose and means of communication, as Clark and Brennan (1991, p. 140) establish. To appropriately interpret linguistic evidence from social media interactions, we must therefore first understand how communication on these platforms is organised and how it systematically drives polarisation.

Social media platforms have evolved into central arenas for public opinion formation. However, they are not purely deliberative spaces. According to Bucher (2020, p. 124), these platforms represent a systematic interweaving of argumentative-rational communication with emotionalised, strategic, and identity-oriented discourses. Platform-specific affordances, such as algorithms and interaction tools, shape interaction structures on these platforms. Consequently, communication in these spaces is characterised by interaction among non-copresent participants in multi-party settings that occur both synchronously and asynchronously. Speaking turns are organised solely by self-selection and marked by high conversational discontinuity, since related contributions do not need to appear next to each other and may be spread over longer periods (Bucher 2020, p. 127).

Implementation tools such as the @-operator, the reply option, retweets, hashtags, comment functions and reaction buttons (like, share, favourite) convert otherwise monologic postings into social interaction by enabling explicit addressee selection, turn-claiming, uptake signalling and recontextualisation (ibid.). Particularly relevant for this study are @-addressing and replies because they mark who is treated as ratified interlocutor and which prior contribution is taken as interactional point of departure, thereby making grounding locally traceable in otherwise diffusible, many-to-many settings.

Under these conditions, assessing shared knowledge is structurally difficult, as participants remain broadly anonymous and have little insight into others' cultural and epistemic backgrounds (Diedrichsen 2023, p. 108). In such an environment, egocentrism systematically outranks cooperation, because users rely heavily on their own cultural frames and experiential repertoires when interpreting issues and other participants' contributions. While social media offers accessibility and enables users to ventilate emotions without accountability—potentially generating new insights into others' sentiments and opinions—shared understanding does not emerge primarily from stable, presupposed common knowledge bases. Instead, common ground must be situationally and often conflictively negotiated as *emergent common ground*, with markers such as negation, disclaimers, directives, irony, and addressings serving as crucial signalling functions.

Against this interactional and socio-cognitive background, Könniker (2019) describes social media as a motor of societal polarisation, including debates on science. Discussions on scientific topics are frequently conducted in highly emotional ways, which facilitates the mobilisation and radicalisation of communities. Seven psychological effects help to explain why attitudes tend to harden rather than change in social networks (Könniker 2019, p. 34-38):

- Confirmation bias fosters selective exposure and the emergence of homogeneous, polarised echo chambers; partisan bias privileges information from one's own camp while devaluing out-group contributions
- Motivated reasoning aligns interpretation of evidence with prior beliefs and emotions to avoid cognitive dissonance
- Backfire effect means that fact-based corrections can strengthen rather than weaken misinformed positions
- Group polarisation intensifies prevailing tendencies through repetition and escalated tone
- Emotional contagion aligns users' affective states
- False news value effect posits that false information spreads particularly well because its perceived novelty and surprise confer higher social currency.

These psychological mechanisms are not unique to online contexts, but they are amplified by the logic of platforms. Bucher's interactional analysis, Diedrichsen's socio-cognitive perspective on emergent common ground, and Könniker's account of psychotechnological amplification all converge on the idea that social media communication is a platform-mediated interactional practice. In this practice, knowledge and stance are

negotiated dynamically under conditions that favour emotionalisation, identity construction, and polarisation over stable, shared, rational deliberation.

## 2.3 Evidence for grounding in the literature

### 2.3.1 Positive evidence in grounding

Clark and Brennan (1991) describe the model 'contributing to conversation' as a collective process that goes far beyond merely uttering sentences. The model is based on the idea that communication is a coordinated activity, in which participants must ensure their contributions become part of the common ground. According to the model, a contribution is not considered complete just because a speaker has said something. Instead, participants must reach a grounding criterion: the mutual belief that partners have understood what the contributor meant to a degree sufficient for current purposes (*ibid.*, p. 129). To reach this criterion, the speaker (A) presents an utterance on the assumption that, if their partner (B) provides sufficient evidence, they can believe that B understands. While some theories assume that understanding is the 'default' state unless negative evidence (such as a repair or clarification) is provided, Clark and Brennan (1991, p. 131) argue that participants in a conversation ultimately seek positive evidence to ground the information. The authors identify three common forms of positive evidence:

- **Acknowledgments** which include back-channel responses such as "uh huh," "yeah," or assessments like "gosh" and "really," as well as non-verbal gestures such as head nods. These signals indicate that the partner is forgoing the opportunity to initiate repair, suggesting they believe they have understood so far.
- **Initiation of the Relevant Next Turn** is often the most effective form of positive evidence. When a partner provides an appropriate response to the previous turn—such as answering a question or accepting an invitation—this demonstrates comprehension. Conversely, an inappropriate next turn signals misunderstanding.
- **Continued Attention** is the most basic form of evidence. As long as a partner maintains unbroken attention (e.g. through sustained eye gaze), the speaker has reason to believe they are following the conversation.

Clark and Brennan emphasise that providing positive evidence follows the principle of least collaborative effort: participants minimise the work required to reach mutual acceptance. To avoid infinite regress—where every piece of evidence would itself require acceptance—relevant next turns and continued attention are preferred because they do not require separate presentation phases, allowing conversation to proceed efficiently (Clark and Brennan 1991, p. 134).

### 2.3.2 Lexical markers of common ground

Fetzer and Fischer (2007) define lexical markers as lexical expressions and grammatical constructions that speakers use to exchange information. These multifunctional devices have different degrees of explicitness and play an important role in the processes of grounding and activating common ground (*ibid.*, p. 1; 7–8). According to Pittner (2007, p. 67), they are derived from lexical items through grammaticalisation, a process that constrains the item's distribution, reduces its meaning, and transfers it to a more intersubjective and pragmatic level. Their main tasks include the following (Fetzer and Fischer 2007, p. 1; 8):

- **Grounding:** They contribute to the process of jointly constructing common ground by ratifying interactants' contributions.
- **Activation of types of common ground:** They act as contextualisation cues or framing signals that activate certain types of common ground, such as cultural, personal or discursive knowledge.
- **Linking domains:** Lexical markers connect different areas of knowledge, such as declarative and procedural knowledge, and explicit public information with implicit, personal knowledge.
- In Fetzer and Fischer (2007), several types of lexical markers are distinguished based on their specific functions in grounding and activating common ground within interaction structure.

#### 1. Discourse Particles

Condor and Cech (2007) describe discourse particles (e.g. 'okay', 'yeah', 'well') as mechanisms that provide positive evidence of understanding. These markers function as 'assertions of understanding' or backchannels that indicate acknowledgement without adding propositional content. In terms of common ground activation, particles such as 'okay' link the current utterance to the jointly constructed 'business at hand', whereas 'well' signals that the speaker's next utterance will differ from the shared expectations of what normally follows (*ibid.*, p. 41).

#### 2. German Modal Particles

Fischer (2007) and Pittner (2007) describe German modal particles (e.g. *ja*, *doch*, *aber*) as metapragmatic instructions. These particles relate an utterance to a "pragmatic pretext"—an argumentative background assumed to be common ground (Fischer 2007, p. 51). By presenting an utterance as a natural consequence of

the existing situation, they mitigate face-threatening acts and specify how the new move stands in relation to shared knowledge (e.g. adversative or additive).

### 3. **Deixis and definiteness**

Okada (2007) notes that deictic expressions and definite articles (e.g. *the*; person, place, and time deixis such as *I, you, he, this, that, here, there, now, then*; bare proper names) function as markers by signalling that a referent is recoverable from the addressee's textual or situational model. These forms presuppose that the referent is part of the shared knowledge. However, if the addressee accommodates a different antecedent than intended, these markers can construct a "supposed common ground", where misalignment remains invisible (Okada 2007, p. 193).

### 4. **Metalinguistic markers and terminological operators**

Penagos (2007) focuses on markers that negotiate the communicative code itself, such as *called, defined as, the term, the word*. These explicit metalinguistic operations introduce new concepts into the communal lexicon. They flag items that cannot yet be presupposed, requiring negotiation; once accepted, these terms become part of the stable terminological common ground for future use (ibid., p. 95-97).

### 5. **Temporal connectives**

Tenbrink (2007, p. 113) argues that temporal connectives (e.g., *before, after*) function to "impose" common ground. By packaging information within a temporal clause as a backgrounded anchor, the speaker treats the event as an established fact. This pushes the addressee to accommodate the information as a shared point of reference, even if it is discourse-new.

All these markers function as multifunctional devices that help participants jointly construct common ground by signalling what information is assumed to be shared, what needs to be updated, and how new information connects to existing shared knowledge.

## 2.3.3 Markers of Emergent Common Ground in online discussions

Diedrichsen (2023, p. 107) conceptualises emergent common ground (ECG) in online discussions as dynamic, particularised knowledge constructed during interaction. Because participants in online spaces are typically anonymous and lack shared socio-cultural backgrounds, ECG becomes the primary basis for mutual understanding—in contrast to "core common ground", which derives from pre-existing shared knowledge. The author identifies five sources of ECG and demonstrates that recurrent formal markers operationalise these processes by flagging misalignment and signalling impending updates to what is treated as shared (Diedrichsen 2023, p. 110-113).

- **Collapsing Contexts:** The collision of diverse linguistic and cultural backgrounds creates "context collapse", where conflicting expectations regarding appropriate behaviour require active resolution through metalinguistic negotiation.
- **Adjacency and Coherence:** Since the chronological order of posts often obscures logical dialogue structure, coherence must be actively constructed using tags (e.g. '@username') and references to the persistent text archive.
- **Stance:** ECG arises through the public evaluation of objects and positioning of self; markers of alignment or disagreement signal necessary updates to the shared state of knowledge.
- **Uncommon Ground:** This involves unveiling assumptions mistakenly treated as shared, such as correcting presumptions or revealing implicit "dark-side commitments".
- **Role and Identity Updates:** Explicit signals regarding a participant's expertise or their intention to exit the conversation modify shared expectations.

The study identifies ten specific categories of markers found in a YouTube discussion thread regarding the Japanese *Hikikomori*<sup>1</sup> phenomenon (ibid., p. 126-127):

### 1. **Indicators of Misalignment and Conflict**

These markers signal that a participant's stance does not align with the established or presumed common ground:

- **Negation:** Lexemes and particles such as "not", "don't" or "I don't agree" are used to signal a stance misalignment and prepare the audience for a new information update.
- **Directives:** When debates become heated, directives like "stop talking" or "look it up" signal that the common ground is being challenged.
- **Ad hominem attacks and Slurs:** These act as strong signals of stance misalignment and often precede a new, opposing stance declaration.
- **Mockery and Irony:** These serve as distance markers. Irony indicates opposition to an expressed fact, while mockery can be a response to a "face threat" or a strategy to end a conversation.

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<sup>1</sup> Hikikomori are people who self-isolate by choice and avoid any contact with the outside world. (Diedrichsen 2023, p. 107).

- **Meta-comments:** Phrases like "oh the irony" or "stop coping" express a stance misalignment regarding a previous utterance or the speaker's own contribution.

## 2. Preventive and Structural Markers

These markers help manage the flow of the conversation and prepare the addressee for what is coming next:

- **Disclaimers:** Expressions like "I know this sounds like..." function as preventive facework. They prepare addressees for an uncomfortable opinion or fact, attempting to maintain a level of rapport despite the upcoming disagreement.
- **The Contrastive "But":** Often following an acknowledgment or a disclaimer, the word "but" acts as a functional preparation for a conflicting utterance.
- **Adjacency Markers (Tagging):** Because online comments are often chronological but not logically sequential, markers like the @tag are crucial. They facilitate "cross-turn addressivity", ensuring the intended recipient knows which specific contribution is being addressed.

## 3. Expertise and Role Management

- **Evaluations of Expertise:** Participants often claim their own expertise or deny the addressee's expertise to signal that an opposing statement is forthcoming.
- **Role Intention Updates:** Markers of irony or mockery can signal "checking out" strategies, where a user indicates they are ending their participation in the discussion.

These markers arise from the pragmatic conditions of online interaction:

- Anonymity and lack of shared background make misalignment likely and require explicit signalling of both conflict and new information.
- Context collapse brings incompatible expectations into contact, prompting overt stance work and metalinguistic negotiation.
- Disrupted adjacency in long, multi-party threads necessitates explicit coherence marking.
- Egocentric, low-accountability behaviour fosters affect-driven, opinion-centred contributions that must still be anchored in some evolving common ground.
- The persistent visibility of the entire text archive enables delayed responses and recurrent debates, which in turn demand markers that tie new turns back to earlier segments of the discourse.

## 2.4 Role of Questions for Grounding

Common ground is also negotiated and established through questions and their responses. An analysis of questions and their responses in (online) interactions can help to determine whether grounding takes place and if it does, to what extent. The focus will be on certain types of questions in the data: information-seeking questions (ISQs), rhetorical questions (RhQs), incredulity questions, leading questions as well as follow-up questions.

Questions in general can be regarded as requests by uncertain speakers for addressees to provide relevant information. If this information is given, the respective answers function as common ground updates (Dayal 2016, p. 269). As Ilie (1999, p. 983) notes, it is possible for answers that follow questions eliciting information to be followed by another move, leading to three-turn-sequences, thus supporting Clark and Brennan's (1991) assumption of necessary positive evidence for the grounding of information. The present analysis builds on this assumption by arguing that in online communication such as YouTube comment threads, at least three turns are necessary to assume with certainty that propositions enter the common ground: a question, a response, and positive evidence for having acknowledged the answer by the original questioner.

Following Caponigro and Sprouse (2007), ISQs are defined as interrogatives to which speakers themselves do not know the answer, but they believe addressees may provide it. Thus, the answer to an ISQ is not part of the common ground yet, but the respective proposition can potentially be added to the common ground.

Follow-up questions are considered to be context-dependent in the sense that to be understood, they need to refer back to information in the current conversation (Bertomeu et al. 2006, p. 1; Kirschner and Bernardi 2007, p. 43-44). While Kirschner and Bernardi define follow-up questions as any question following the first in the dialogues they analyse, they note that these do not necessarily need to be connected to the preceding dialogue (p. 44). In the present study, however, the term follow-up question is used for all questions that are context-dependent and refer back to some information in the current dialogue, regardless of whether they are the first question in this conversation or not.

According to Ilie (2022, p. 172), leading questions are used strategically by speakers to lead addressees towards certain beliefs they want them to accept, based on how the questions are phrased and contextualised. The goal of these questions is to have the encoded propositions confirmed by the addressee (Ilie 2022), so these propositions should enter the common ground.

RhQs are regarded as interrogatives to which speakers do not expect answers because the answer is already known to speakers and addressees, so it is already part of the common ground (e.g. Meibauer 1986; Schöpsdau 1996; Han 2002; Rohde 2006; Caponigro and Sprouse 2007).

This study also analyses the use of incredulity questions. Speakers uttering such questions comprehend the preceding utterances perfectly well but intend to express surprise or incredulity (Cohen 2007; Geilfuß-Wolfgang 2019). Thus, incredulity questions are regarded as a potential marker of uncommon ground in this study.

### 3 Methods

#### 3.1 Data basis

This study is based on discussions of two YouTube videos that present opposing views on sex and gender. To provide context, one video is from the right-leaning media outlet Junge Freiheit, and the other is from the public science communication platform MAITHINK X. These videos were chosen to capture a range of polarised opinions and the negotiation processes involved in establishing common ground in polarised discussions. The content of the two selected videos is described in Table 01

**Table 01** Description of the two video

	Video 1 (ytdk002)	Video 2 (ytdk012)
<b>Source</b>	Junge Freiheit: German conservative media outlet	MAITHINK X: German science education channel (funk)
<b>Key Speaker</b>	Prof. Ulrich Kutschera, Evolutionary Biologist	Dr. Mai Thi Nguyen-Kim, Chemist/Science Communicator
<b>Core Argument</b>	Two biological sexes only, defined by gametes (sperm/eggs)	Two sexes for reproduction; spectrum of sex characteristics and gender identities
<b>Framing</b>	<b>Rejection of Gender Theory:</b> "Gender" is framed as a sociological ideology confusing primary and secondary sexual characteristics. <b>Pathologization:</b> Transgender identity is framed as either a rare developmental disorder (DSD) or a social "fashion" trend among youth.	<b>Validation of Identity:</b> Explicitly separates biological sex from "Gender Identity" (psychological/social). <b>Social Responsibility:</b> Argues that respecting chosen pronouns is a moral imperative, independent of biological definitions.
<b>Tone</b>	Critical of "gender ideology", transgender medical interventions	Supportive of transgender individuals; emphasises nuance and complexity

In the context of the qualitative analysis of the comments, the size of the sample is not a relevant factor; rather, the content is the primary consideration. The MAITHINK X channel's video has a total of 18,000 comments, while the Junge Freiheit channel's video has approximately 500. For a comprehensive overview of the data basis, please refer to Table 02.

**Table 02** Data basis

	Video 1 (ytdk002)	Video 2 (ytdk012)
<b>Channel</b>	Junge Freiheit	MAITHINK X
<b>Title</b>	Bio-Prof erklärt: Warum es nur zwei Geschlechter gibt (JF-TV Thema)	Wie viele Geschlechter gibt es?
<b>Date of upload</b>	08.07.2022	27.11.2022
<b>Date of collection</b>	15.10.2024	15.10.2024
<b>Information on the channel (as of 15.10.2024)</b>	Subscribers: 131,000; Likes: 2,456; Dislikes: 0; Views: 40,694; Length of the video: 31:26 minutes	Subscribers: 1.47 million; Likes: 61,828; Dislikes: 0; Views: 957,681; Length of the video: 21:59 minutes
<b>Total number of comments</b>	494 comments	18.035 comments
<b>Number of interactions Analysed</b>	17 interactions (212 comments)	123 interactions (397 comments)
<b>Tool</b>	yt_dlp	yt_dlp

A total of 609 comments were subjected to a manual analysis, distributed across 140 interactions. All interactions of the video ytdk002 were analysed, whereas for video ytdk012, only interactions found among the first 1,500 comments were analysed.

### 3.2 Methodological approach

The study follows a multiphase qualitative analysis process combining deductive and inductive elements. The steps are described below.

#### Step 1: Listing linguistic markers from the specialist literature

The first step was to systematically compile a list of linguistic markers from the specialised literature. ‘These theoretically grounded markers were described in Section 2.3. and formed the basis of the analysis grid for the subsequent empirical investigation of the comment sample. Literature on questions was systematically analysed regarding question types potentially influencing common ground and grounding processes. The question types that were considered as most relevant for these processes, as well as for polarised discourse, were chosen for this study.

#### Step 2: Qualitative annotation and interpretation

The comments were systematically annotated and interpreted using qualitative content analysis. The previously identified literature-based markers were used as a framework for identifying linguistic elements through which participants in the interaction establish, negotiate, negate, or refuse to negotiate common ground. Annotation was carried out with particular attention to the respective discussion context and sequential embedding of statements. The annotation process was firstly conducted by the two authors independently. After that, the annotations and the identification of the functions in the grounding process were discussed conjunctly.

#### Step 3: Inductive expansion of markers

Additional linguistic markers that are not listed in the existing specialised literature were identified and interpreted during the annotation process. These included incredulity and leading questions as well-fixed assertions. These markers, derived from empirical analysis, were systematically documented and integrated into the analysis framework, thereby expanding the theoretical understanding of linguistic marking of grounding.

## 4 Results

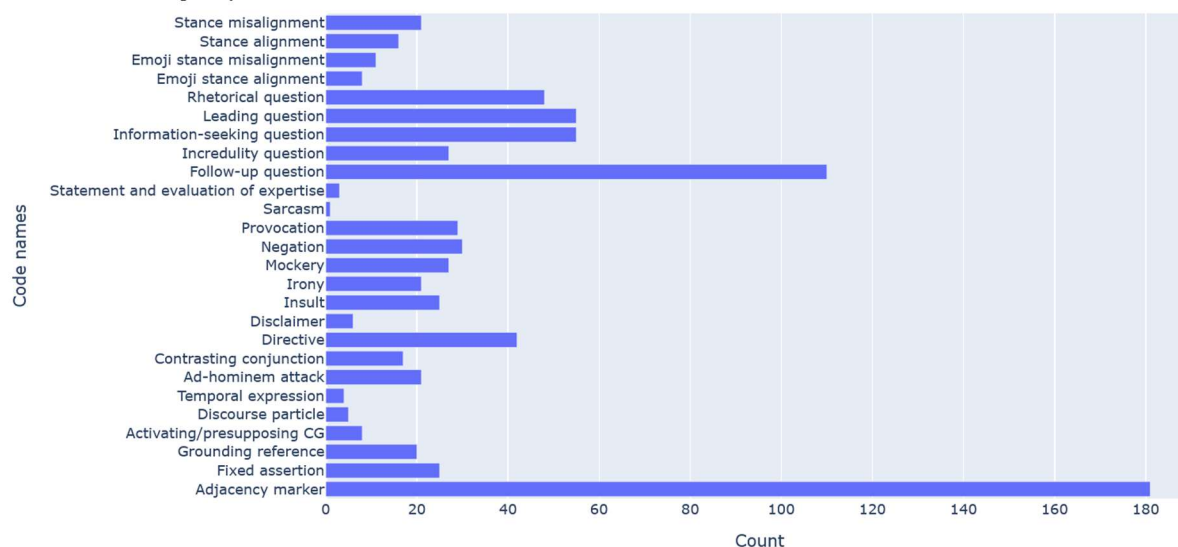
The analysis reveals findings regarding the grounding process between the interactants in the comment threads. It is important to note that one thread can comprise multiple interactions: replies to the top comment or reactions to a specific reply in the thread. The following figure visualises the code categories of the markers found in this study:

**Figure 01** Formal markers for positive and negative evidence of grounding in the data

Misalignment	Questions	Stance	Lexical markers	Others
<ul style="list-style-type: none"> <li>• Ad-hominem attack/insult</li> <li>• Irony/sarcasm/mockery</li> <li>• Directive</li> <li>• Disclaimer</li> <li>• Contrasting conjunction</li> <li>• Negation</li> <li>• Statement and evaluation of expertise</li> <li>• Provocation</li> </ul>	<ul style="list-style-type: none"> <li>• Rhetorical question</li> <li>• Follow-up question</li> <li>• Incredulity question</li> <li>• Information-seeking question</li> <li>• Leading question</li> </ul>	<ul style="list-style-type: none"> <li>• Expressions for stance alignment (agreement)</li> <li>• Expressions for stance misalignment (disagreement)</li> <li>• Emojis for stance alignment (agreement)</li> <li>• Emojis for stance misalignment (disagreement)</li> </ul>	<ul style="list-style-type: none"> <li>• Activating/presupposing CG (ja, doch, 'wie wir wissen')</li> <li>• Discourse particle (okay, natürlich, jain)</li> <li>• Temporal expression (schon immer)</li> </ul>	<ul style="list-style-type: none"> <li>• Adjacency Marker</li> <li>• Grounding Reference</li> <li>• Fixed Assertion</li> </ul>

Most of these markers are already described in the literature. They are used to signal different functions in the grounding process except for leading and incredulity questions as well-fixed assertions. Following Clark and Brennan (1991), we use the terms positive and negative evidence. Positive evidence shows explicitly that common ground was successfully established in the current interaction. This kind of evidence comprises markers such as expressions and emojis for stance alignment, discourse particles (okay, natürlich) and the answers for questions. Negative evidence shows explicitly that common ground still has to be established, although it is sometimes presupposed or denied at all. This kind of evidence comprises the most frequent markers found in the data, which was expected due to the nature of online communication about a polarised topic. Chart 01 visualises the code frequency of these markers in the analysed interactions (in both files):

**Chart 01** Code frequency of markers in the interactions



The results show that grounding in the comments<sup>2</sup> is a dynamic, contested process with recurrent linguistic resources for establishing, negotiating, negating, and refusing to negotiate common ground. The description of the results moves from the least conflict-driven interactions (establishing common ground) to the most polarised (refusal to negotiate), mirroring the degradation of discourse often seen in these debates.

#### 4.1 Establishing common ground

Accounting for 6.15% of the coded interactions, this pattern appeared exclusively in interactions about the *Junge Freiheit* video. Within these interactions, participants engaged in establishing common ground by providing positive evidence of grounding through various linguistic markers. Recurring markers in the data include elements that express stance alignment, such as:

- a) Expressions of agreement (stance alignment)
- b) Answer particle
- c) Emojis: As can be seen in the precedent examples, emojis are often used in combination with other expressions or alone to show common ground or stance alignment.

The three following examples demonstrate how common ground is established in the interactions.

(01)  
 227: @[username1] Es gibt Biologisch gesehen 2 Geschlechter. Igbtqia+ ist eine Lebenseinstellung und muss nicht extra hervorgehoben werden, jeder kann sein Leben gestalten wie er gerne möchte und darf andere nicht aus Ideologischen Gründen hineinziehen  
 15-10-2022 top level Comment

228: @[username2] Genau so sehe ich die Sache auch  
 15-10-2022 reply  
 (ytdk002 thread 06)

In the first comment, user 1 expresses the view that there are only two sexes, biologically speaking, and that LGBTQIA+ identities should not be highlighted for ideological reasons, implying a naturalised and non-political view of gender. In their reply, user 2 explicitly aligns with this stance, stating *Genau so sehe ich die Sache auch* (That's exactly how I see it too), which signals direct agreement and shared understanding. Through this

<sup>2</sup> The comments are presented in their original form; spelling and grammatical errors are not corrected. For data protection, usernames are anonymised. The parts of the comments relevant for discussion are underlined.

affirmation, the users establish common ground by converging on a view that (a) limits biological sex to two categories and (b) treats LGBTQIA+ identities as a lifestyle choice rather than a legitimate, socially recognised spectrum.

(02)

354: @[username1] "Gott schuf den Menschen als Mann und Frau. ENDE"  
15-10-2022 top level Comment

355: @[username2] 👍👍👍👍👍👍 Amen!  
15-10-2022 reply  
(ytdk002 thread 11)

In comment 354, user 1 invokes the biblical citation *Gott schuf den Menschen als Mann und Frau* (God created man as male and female) to express a fixed, religiously grounded view on gender. The typographically isolated and capitalised closing marker *ENDE* (END) further reinforces this absolute stance by explicitly closing off any possibility of debate. In comment 355, user 2 responds with a sequence of six thumbs-up emojis, followed by 'Amen!'.

Each of these elements contributes to expressing alignment in a different way: the repeated '👍' emoji functions as an amplified affirmation, with the repetition indicating the intensity of user 2's endorsement more than a single emoji would. 'Amen', borrowed from liturgical discourse, operates as a statement of agreement that is particularly well-matched to the religious register of user 1's comment. By using it here, user 2 agrees with the content of the comment and also accepts and mirrors the devotional framing through which it was delivered. Common ground is thus established at both the content and frame levels.

(03)

472: @[username1] Eine Minderheit zwingt der Mehrheit, ihre Kranken Gedanken auf.  
15-10-2022 top level Comment

473: @[username2] Dann muß die Minderheit kräftig eins auf die 12 bekommen. 😏  
15-10-2022 reply

474: @[username3] Kranken-Gedanken?  
15-10-2022 reply

475: @[username1] hans hansen 👍  
15-10-2022 reply

476: @[username4] 👍👍👍 Ja. Und die Überheblichkeit dieser kranken Menschen macht mich stinksauer! Die versuchen einfach mal so mit ihrem lauten Gegröle die Fakten mundtot zu machen. Was bilden die sich eigentlich ein?!  
15-10-2022 reply  
(excerpt from ytdk002 thread 17)

In interaction (03), user 1 positions gender diversity as a minority (*Minderheit*) that imposes sick thoughts (*kranke Gedanken*) on the majority (*Mehrheit*). This creates a moral and ideological boundary between the in-group (the majority) and the out-group (those expressing gender-diverse identities). In comment 473, user 2 builds on this framing by escalating it; the suggestion that the minority should be physically punished ratifies user 1's hostile characterisation of the out-group and extends it to an explicit call for retributive action. The winking emoji slightly mitigates the severity of the statement by adding an air of dark humour but does not neutralise its content. User 1 clearly agrees with this reply in comment 475 with a thumbs-up emoji, confirming that user 2's escalation is in line with their shared position.

User 4 then consolidates this common ground more elaborately in comment 476. The opening sequence of three '👍' emojis followed by *Ja* (yes) functions as an unambiguous, amplified ratification of user 1's initial stance, with the repetition of the emoji indicating the intensity of agreement, and *Ja* providing an explicit verbal anchor for this alignment. User 4 then builds on the shared position by introducing additional criticisms of the out-group: arrogance (*Überheblichkeit*), irrationality (*lautes Gegröle*), and an attempt to suppress truth (*die Fakten mundtot zu machen*). Rather than merely echoing user 1's framing, these additions enrich it, co-constructing a more fully elaborated negative characterisation of the perceived out-group. The incredulity question — *Was bilden die sich eigentlich ein?!* (What do they think they are doing?!), simultaneously expresses stance alignment with user 1's positioning as well as indignation and appeals to the in-group for recognition of the out-group's supposed presumptuousness.

#### 4.2 Negotiating common ground

In polarised online debates, common ground, in many interactions, must first be negotiated. Instances of such negotiation were identified in 25.1% of the data. Explicit markers of this process include:

- a) Questions: rhetorical questions, leading question, incredulity question, information-seeking question, follow-up question
- b) Discourse particle
- c) Grounding reference
- d) Expression for activating/presupposing CG
- e) Contrasting conjunction
- f) Adjacency marker

This process of negotiating CG is illustrated in examples (04) and (05).

(04)

59: @[username1] Ich habe eine biologische Frage: Wie kann ein Embryo weder weiblich noch männlich sein, nur weil es äußerlich noch keinen Penis oder Vagina hat? Die genetische Information XX oder XY trägt doch ein Embryo in sich, oder nicht. Damit ist es von Anfang an klar weiblich oder männlich. Es sei denn es trägt andere genetische Informationen in sich, wie XXY XYY. Dann ist es intersexuell, korrekt?  
15-09-2024 top level Comment

60: @[username2] "Jain". Die Gene sind quasi ein Bauplan, wobei das Wort Plan an dieser Stelle als sehr gestreckt angesehen werden sollte. Das Ganze funktioniert weniger wie eine Blaupause, wo du einfach vollständig beschrieben bist, sondern vielmehr wie eine Experimentieranleitung.

(...)

15-09-2024 reply  
(excerpt from ytdk012 thread 06)

In comment 59, user 1 introduces a biological framing of sex by posing two questions, one rhetorical and one direct ending with the tag *korrekt?* (correct?), which function as rhetorical devices presenting their understanding as self-evident and widely shared. The particle *doch* further reinforces this by presupposing that the underlying genetic dichotomy (XX/female and XY/male, with XXY/XYY being considered intersex) is widely recognised and accepted. Together, these elements propose a CG anchored in a genetically fixed, binary model of sex, which the user treats as an implicit starting point for the discussion.

In comment 60, user 2 builds on these propositions, negotiating this CG through the discourse particle *Jain* (a blend of *ja* (yes) and *nein* (no)), which signals both partial agreement and corrective suggestion. The reference to *die Gene sind quasi ein Bauplan* (the genes are essentially a blueprint), followed by the metalinguistic remark *bei dem das Wort Plan an dieser Stelle als sehr gestreckt angesehen werden sollte* (in which the word 'plan' should be understood as highly stretched) and the contrastive construction *weniger wie ... sondern vielmehr wie...* (less like ... rather than like ...) highlights that the previous framing is being reinterpreted rather than simply accepted. This indicates that the CG is not simply being confirmed, but renegotiated.

(05)

(...)

273: @[username2] @[username1] Wie man Personen anreden soll, ist keine Frage der Biologie. In deinem Beispiel von vorhin ist es ein biologische Mann, der wahrscheinlich erst in der Pubertät herausfindet biologisch betrachtet ein Mann zu sein (keine Periode, kein Brustwachstum, evt. Stimmbruch durch die vorhanden Hoden in der Leiste). Wahrscheinlich wird dieser Mensch sich trotzdem als Frauen sehen und von der der Gesellschaft so betrachtet werden (wenn er anfängt weibliche Hormone zu nehmen). Das alles ändert aber nichts am Ausgangsthema, dass es aus BIOLOGISCHER Sicht nur zwei Geschlechter geben kann.  
15-10-2022 reply

274: @[username1] @[username2] Aber jene Menschen haben ein Recht auf eine "Anrede", eine Geschlechter spezifische Anrede ! Und diese Menschen wollen das auch! Dir ist klar, dass du diese Menschen sonst aus der Gesellschaft ausschliesst? 15-10-2022 reply

275 @[username1] " @[username2] Es geht eigentlich um die gesellschaftliche und politische Anerkennung dieses Menschentyp's! Es geht darum, dass der ""Zwitter"" sich zu einem Geschlecht zuordnen kann. Es geht um die sexuelle Identität eines Menschen. Wie definiert sich ein Mensch? Und ohne eigene Geschlechtsidentität, wird dieser Menschentypus ""Zwitter"" aus der Gesellschaft ausgeschlossen. Genauso wie Homosexuelle !!! Das Wort ""Homo"" langt meistens schon, dass Menschen aus der Gesellschaft ausgeschlossen und gebrandmarkt werden. Beim ""Zwitter"" ist das genauso! Warum dürfen sich Zwitter nicht ""Zwitter"" nennen dürfen? Wir leben in einer offenen Gesellschaft und die Menschen sollen das Recht auf Freiheit und Anerkennung haben. Zumindest in einer funktionierenden Demokratie !"  
15-10-2022 reply

(...)

285 @[username2] @[username1] Das sind alles andere Themen (juristische, gesellschaftliche usw.) In diesem Beitrag gehts NUR um die Biologie. Was ist so schwer daran, das zu verstehen? Und zu ihren Ausführungen: "diese Menschen wollen das auch" Es gibt viele die froh sind, als normaler Mann oder Frau durchzugehen. Viele die heute viel Lärm machen, sind garicht intersexuell, sondern sagen einfach "Ich bin nonbinary". Aber das nur am Rande. Denn das ist hier nicht Thema.  
15-10-2022 reply

286 @[username1] " @[username2] Darum geht es im Kern ! Was sagt ein ein Zwitter zum Standesbeamten wenn er heiratet? Zu welchem Geschlecht gehört er? Was wird der Standesbeamte wohl in die Heiratsurkunde hineinschreiben? Muss sich dann der Zwitter als Mann oder Frau outen? Nein er hat das Recht sich ""Zwitter"" nennen zu dürfen. Es geht eben um diese und andere Rechte, die in einer Gesellschaft wichtig sind. Darf ein ""Zwitter"" zum Militär und Dienst leisten? Usw. Bitte denke doch selber mal nach. Muss ich dir alles vordenken? Bist du nur stur oder...

Mir kommt diese Diskussion so ähnlich vor wie damals zum Schwulenparagraph = § 175 ! Er stellte sexuelle Handlungen zwischen Personen männlichen Geschlechts unter Strafe und ermöglichte somit die Verfolgung Homosexueller."

15-10-2022 reply

(...)

(excerpt from ytdk002 thread 8)

Interaction (05) is part of a very long thread with many participants reacting to different comments. In order to clearly mark the addressee, the two commenters mark each other through @-addressing. This is the first signal of negotiating CG in the interaction. In comment 274, user 1 uses the contrasting conjunction *aber* (but) and a follow-up question to show their opposing view to user 2's statement in comment 273 about how people should be addressed. The question in comment 274 is classified as a follow-up question referring back to the people (*diese Menschen*, needs antecedent) mentioned in the preceding comment. Even though this question has a leading touch, user 1 still seems to be open to negotiate common ground through trying to provocatively trigger responses.

Several information-seeking questions can be found throughout this discussion thread: *Wie definiert sich ein Mensch?* (How is a human being defined?)/ *Warum dürfen sich Zwitter nicht ""Zwitter"" nennen dürfen?* (Why are hermaphrodites not allowed to call themselves 'hermaphrodites'?)/ *Was sagt ein ein Zwitter zum Standesbeamten wenn er heiratet?* (What does a hermaphrodite say to the registrar when they get married?)/ *Zu welchem Geschlecht gehört er?* (Which gender do they belong to?)/ *Darf ein ""Zwitter"" zum Militär und Dienst leisten?* (Are hermaphrodites allowed to join the military and serve?). Through posing these questions, the users signal their willingness to negotiate common ground, trying to trigger responses to their questions from other users.

The underlined question in comment 285 is an incredulity question through which user 2 expresses their incredulity about somebody else not understanding that the present discussion is about biology alone, as expressed by *NUR* (only) in caps directly preceding the question. This question is part of a sequence in which the commenters negotiate CG, trying to trigger a response from other commenters on the issue at hand. In addition to the various question types, the metalinguistic marker *Wort* (word) in 275 and the direct quotation *diese Menschen wollen das auch* (these people want that too) in 285 are also used to negotiate CG.

### 4.3 Negating common ground

43.1% of the coded interactions focus on negating common ground, with no attempt at negotiation. Rather than working towards alignment, participants simply signal misalignment of stances and a lack of common ground. This pattern was to be expected given the nature of the data: online discourse centred on a polarised topic. Recurring linguistic markers include:

- a) Questions: Rhetorical question, follow-up question
- b) Insult
- c) Irony/Sarcasm
- d) Mockery
- e) Ad Hominem Attack
- f) Provocation
- g) Directive
- h) Temporal expression
- i) Expressions of disagreement showing stance misalignment
- j) Emojis showing stance misalignment
- k) Negation
- l) Adjacency marker
- m) Temporal expression
- n) Expression for activating/presupposing CG
- o) Fixed assertion

(06)

102: @[username1] Volksverdummung im Auftrag des ZDF? Es gab schon immer nur zwei Geschlechter und ja es gab auch schon immer Abweichungen davon. Ändert aber nix an der Tatsache daß es nur zwei Geschlechter gibt. ZDF euer Beitrag verwurschtelt so einiges. Das soll so sein, denke ich, soll wohl die "Komplexität" hervorheben. Hahahahaha!

15-08-2024 top level Comment

103: @[username2] Bimodal Distribution, google und lerne du Fossil

24-09-2024 reply

104: @[username3] @[username2] Und was ändert "Bimodal Distribution" genau an der Anzahl der Geschlechter "du Fossil"?  
24-09-2024 reply

105: @[username2] @[username3] da hat also wer net gegoogled, kein Ding Opa du kriegst deine Tabletten schon noch.  
24-09-2024 reply

106: @[username3] @[username2] Kannst mich ja kurz aufklären?  
24-09-2024 reply

107: @[username2] @[username3] also bitte Opa, du weist doch wohl noch wie ein Computer funktioniert oder nicht? Sicherlich muss ich dich nicht mit dem Löffel füttern.  
24-09-2024 reply  
(ytdk012 thread 15)

In the first comment, user 1 uses various markers of misalignment such as a RhQ to introduce a provocative proposition into the discourse: *Volksverdummung im Auftrag des ZDF?* (dumbing down on behalf of the ZDF?) supported by the insult *Volksverdummung* (dumbing down), sarcasm (*Das soll so sein, denke ich ...* (That's how it should be, I think...)), and markers for activating an assumed CG such as the particle *ja* and a temporal expression together with a fixed assertion (*Es gab schon immer nur zwei Geschlechter* (There have always only been two sexes)) to express a different view on the number of biological sexes from the speaker in the video. User 2 reacts to the first comment by also using expressions of misalignment such as a directive and an insult (*google und lerne du Fossil* (google and learn, you fossil)) to show their disagreement with user 1's view that there are only two sexes. In their view, this is a bimodal distribution (two main groups with variation).

In the following four interactions (comments 104 to 107), user 2 engages in a provocative exchange with a third user. They both use the @-addressing to make clear that they are reacting to each other's comment and not to commenter 1. They express disagreement with each other's view by using mockery in combination with a follow-up question. The underlined question in comment 104 shows how CG is negated through a follow-up question with a rhetorical touch. The commenter refers back to the concept of a "Bimodal Distribution" mentioned in the directly preceding comment. The negation of CG is shown through the expected negative answer as well as provocatively calling the preceding commenter "Du Fossil" (you fossil). Both terms are in quotation marks, mockingly adopting the terminology used by user 2 in comment 103.

In 105, commenter 2 reacts negatively to the preceding comment with mockery, criticising .commenter 3 for not informing themselves (*da hat also wer net gegoogled* (so someone didn't google)) as requested and calling them senile (*kein Ding Opa du kriegst deine Tabletten schon noch* (no problem grandpa, you'll get your pills soon enough)). The interaction continues in the same style in comments 106 and 107: a follow-up question and mockery to show disagreement in a provocative way.

(07)  
171: @[username1] Es gibt Menschen mit Eierstöcken und Menschen die Samen produzieren. Ob sie das wollen oder nicht ist egal. 🤔  
15-10-2022 top level Comment

172: @[username2] So einfach ist es nicht. Es gibt biologisch mehr als 2 Geschlechter. Das ist wissenschaftlicher Konsens.  
15-10-2022 reply

173: @[username1] @[username2] Unsinn, wie es auch keinen Wissenschaftlichen Konsens gibt. Wenn 97% glauben das es so sei, ist das genauso falsch wie wenn es nur einer glaubt  
15-10-2022 reply

174: @[username2] @[username1] Doch den gibt es und zwar seit Jahren schon. Sie sind leider sehr bildungsfern und schlafen. Lesen sie in den entsprechenden Fachzeitschriften wie den Nature oder gehens auf eine Uni. Meine Frau hat vor 20 Jahren schon gelernt dass es mehr als 2 gibt.  
15-10-2022 reply

175: @[username2] @[username1] Sie verstehen übrigens ja nicht mal was wissenschaftlicher Konsens bedeutet. Das bedeutet nicht die Mehrheit der Wissenschaftler sondern der aktuelle Stand der wissenschaftlichen Forschungsergebnisse.  
15-10-2022 reply

176: @[username1] "@[username2] 🤖🤖 XX XY und neu Z wie Zombies"  
15-10-2022 reply  
(...)  
(excerpt from ytdk002 thread 004)

This excerpt from a discussion thread with multiple participants focuses on the interaction between two users, demonstrating the active negation of CG through the use of negation markers, expressions of disagreement, ad

hominem attacks and directives, among other elements. These linguistic markers block the negotiation of common ground regarding the biological basis of gender.

In comment 172, user 2 rejects the simplification in the previous comment with *So einfach ist es nicht* (It's not that simple) and challenges the claim about scientific consensus. User 1 then replies with *Unsinn* (nonsense) and *ist das genauso falsch* (that's just as wrong), framing the disagreement as a categorical rejection rather than acknowledging any nuance.

User 2 responds with personal attacks and confrontational directives that prevent any collaborative progress. Using ad hominem attacks, user 2 undermines user 1's epistemic competence rather than engaging with the content of their claims, with comments such as *Sie sind leider sehr bildungsfern und schlafen* (Unfortunately, you are very uneducated and you sleep) and *Sie verstehen übrigens ja nicht mal was wissenschaftlicher Konsens bedeutet* (By the way, you don't even understand what scientific consensus means). These are accompanied by directives, such as *Lesen sie in den entsprechenden Fachzeitschriften* (Read the respective specialist journals), and temporal expressions, such as *seit Jahren schon* (for years now) and *vor 20 Jahren* (20 years ago), reinforcing the speaker's claim of authority while positioning the addressee as epistemically deficient.

The contrasting conjunction *nicht ... sondern* (not ... but) in comment 175 serves as a metalinguistic corrective function. However, it is embedded within the ad hominem attack *Sie verstehen übrigens ja nicht mal was wissenschaftlicher Konsens bedeutet* (By the way, you don't even understand what scientific consensus means), which undermines its potential as a genuine grounding move. The sarcastic phrase *XX XY und neu Z wie Zombies* (XX YY and new Z for zombies), accompanied by a laughing emoji reduces the debate to parody, mocking the interlocutor's position and signalling that a shared understanding is neither possible nor desirable.

#### 4.4 Refusing to negotiate common ground

This function accounts for 25.6% of the coded interactions and is characterised by a clear misalignment of stances and an absence of shared common ground. Crucially, there is no willingness on the part of the interactants to negotiate. Recurring markers in these cases include:

- a) Fixed assertion
- b) Statement and evaluation of expertise
- c) Adjacency marker
- d) Disclaimer
- e) Questions: follow-up questions, Rhetorical questions
- f) Directive: indirect with modal verb *müssen*, verb in imperative
- g) Negation
- h) Expression of disagreement
- i) Ad hominem attacks
- j) Irony
- k) Mockery
- l) Provocation

(08)

188: @[username1] Das ist und bleibt auch so - 2 Geschlechter! Alles andere ist ideologie- und hormongesteuerter Wahn...

15-10-2022 top level Comment

189: @[username2] Biologisch gibt es aber mehr als 2 Geschlechter. Das ist wissenschaftlicher Konsens und hat man schon vor 20 Jahren auf jeder Uni so gelernt. Fragens meine Frau. Die ist studierte Biologin.

15-10-2022 reply

190: @[username1] @[username2] Tut mir leid - da ist Ihrer Frau (trotz Studium) und Ihnen etwas wichtiges entgangen. Es gibt den Konsens dass es zwei biologische Geschlechter gibt, sonst nichts! Sie und Ihre Frau meinen wahrscheinlich "soziale Geschlechter"? Das hat mit der Biologie nichts zu tun, auch wenn sich manche Leute das gerne herbei wünschen. Gott sei Dank leben wir in Zeiten, in denen man sich mit allerlei Informationen sehr gut bilden kann - es muss nur getan werden.

15-10-2022 reply

191: @[username2] @[username1] Nein das ist absolut falsch. Sie sind wohl im Mittelalter stecken geblieben. Lesen sie die Publikationen im Nature dazu. Es gibt biologisch mehr als 2 Geschlechter und das ist wissenschaftlicher Konsens seit Jahren. Also ja bilden sie sich endlich.

15-10-2022 reply

(excerpt from ytdk002 thread 005)

This interaction is dominated by an escalation from assertion to personal attack. Both participants use specific rhetorical devices to assert their epistemic authority, while rejecting the idea of negotiating common ground. User 1 initiates the discussion with a fixed assertion expressing a rigid, non-negotiable stance: *Das ist und bleibt auch so - 2 Geschlechter!* (That is and will remain so - 2 genders!)

User 2 responds with an equally categorical counter-assertion — *Das ist wissenschaftlicher Konsens* (That is scientific consensus) — and reinforces it through an appeal to expert authority: *Fragens meine Frau. Die ist studierte Biologin.* (Ask my wife. She is a qualified biologist.). According to Walton (1995: 46; 281), this constitutes an *argumentum ad verecundiam*: an appeal to authority presented with such confidence that the speaker is not prepared to tolerate opposition. However, the reference to the user's wife's credentials, based solely on her having studied biology twenty years ago, provides no verifiable information about her current expertise or research activity, resulting in an epistemically insufficient appeal. Furthermore, this statement does not open a space for negotiation but rather closes it by invoking unchallengeable authority, with user 2 signalling that the proposition is settled and need not be discussed further.

In comment 190, user 1 creates a discursive space in which alignment might be reached through conceptual differentiation by reframing the disagreement as a potential terminological confusion between biological and social conceptions of gender through the follow-up question *Sie und Ihre Frau meinen wahrscheinlich 'soziale Geschlechter'?* (You and your wife probably mean 'social genders'?). The use of quotation marks around '*soziale Geschlechter*' (social genders) may signal a rejection of the concept (Dreesen 2019; Putterer 2023; based on Klockow 1980), while still engaging with it as a possible point of convergence. This negotiation strategy is accompanied by the disclaimer *Tut mir leid* (I'm sorry), which serves as a form of preventive facework, as well as an indirect imperative — *es muss nur getan werden* (it just has to be done) — that, despite its paternalistic tone, presupposes the interlocutor's ability to update their knowledge.

However, in the following comment, user 2 categorically refuses to negotiate CG. This is evident from the absolute negation *Nein das ist absolut falsch* (No that is absolutely wrong). Further, the ad hominem attack *Sie sind wohl im Mittelalter stecken geblieben* (You seem to be stuck in the Middle Ages) frames the opposing view as epistemically outdated and morally deficient, rather than engaging with the proposed notion of *social genders*. The imperative clauses *Lesen Sie die Publikationen ...* (Read the publications ...) and *bilden sie sich endlich* (educate yourself eventually), together with the temporal marker *seit Jahren* (for years) and the expression *endlich* (eventually), signal impatience and a refusal to treat the addressee as a co-participant in knowledge negotiation. Instead, they position the discussion as a one-sided demand to conform to an expert consensus that has already been established, effectively blocking any possibility of negotiating common ground.

(09)

(...)

264: @[username1] @[username2] lol das sind also die Argumente von einem Proleten ? Unglaublich informativ und ausgewogen :) 15-10-2022 reply

265: @[username2] @[username1] Dumm bist eigentlich nur du. 15-10-2022 reply

266: @[username2] @[username3] Kapieren die gegenderten Klimahüpfer eh nicht, die speichern auch Strom im Netz.

15-10-2022 reply

(excerpt from ytdk002 thread 008)

This brief excerpt from a longer thread illustrates the final stages of an interaction in which common ground has been abandoned completely. Instead, the discourse shifts entirely to mockery, direct insults and derogatory comments about groups. These comments primarily serve to discredit the opponent and signal in-group/out-group affiliations.

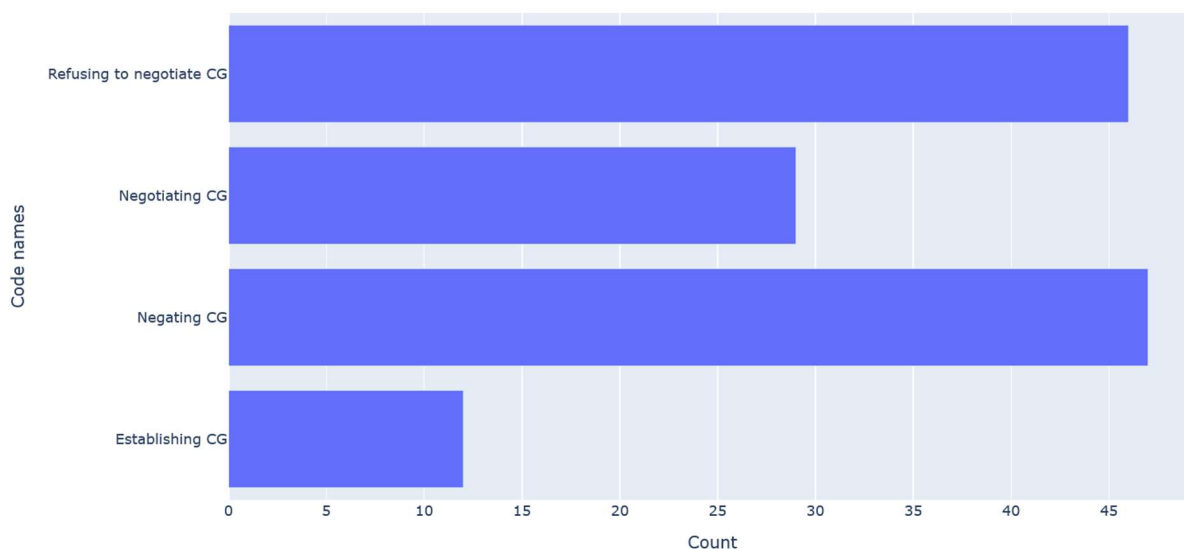
Comment 264 opens with a rhetorical question combined with irony (*lol das sind also die Argumente von einem Proleten? Unglaublich informativ und ausgewogen* (lol so those are the arguments of a proletarian? Incredibly informative and balanced)). The RhQ refers back to arguments made by user 2 earlier in the thread. User 1 expects a negative answer, which presupposes a negative evaluation of user 2's arguments and implicitly rejects them as neither serious nor credible, but rather as the opinions of an uncultured person'.

This refusal is followed by an explicit ad hominem attack in line 265 (*Dumm bist eigentlich nur du* (Actually, you're the only one who's stupid)), which targets the addressee personally rather than their arguments, further undermining any possibility of collaborative debate. Comment 266 then extends this pattern to a third participant by using the derogatory term *gegenderten Klimahüpfer* (gendered climate-hoppers), which categorises the opponents as a derogatory out-group. This amalgamates gender politics and climate activism into a single, dismissive label. The absurd claim *die speichern auch Strom im Netz* (they also store electricity in the grid) mocks and stereotypes an out-group by attributing them technological ignorance. This functions as a collective ad hominem attack that denies epistemic competence to anyone holding the opposing view.

### Summary of the functions

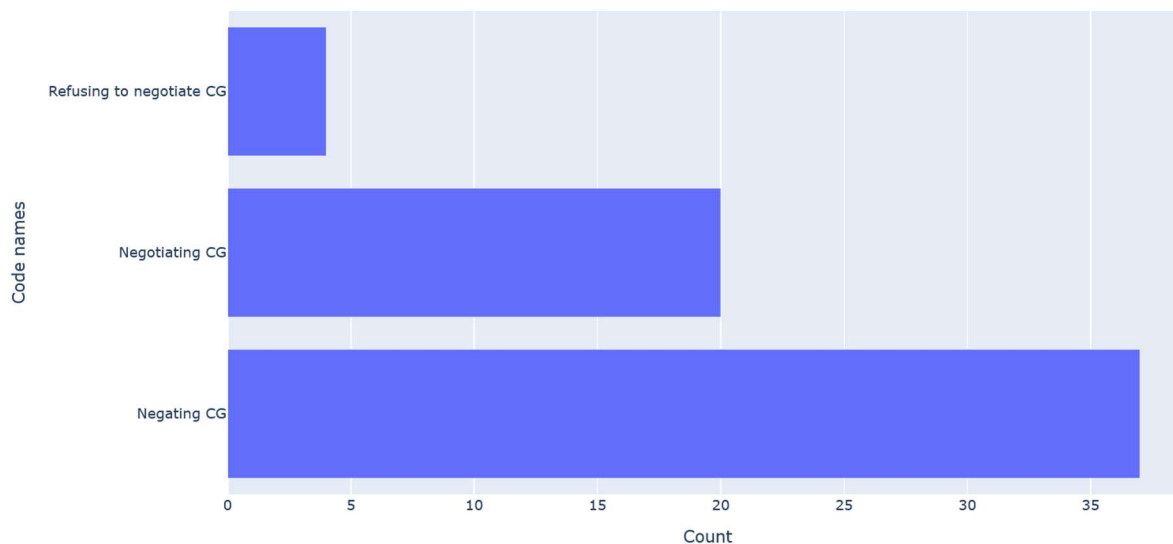
Charts 02 and 03 illustrating the frequency of coded functions per file show differences across discussions. In the discussion threads of the Junge Freiheit video (ytdk002), evidence was found for all four functions (Chart 02), whereas the discussion threads of the MAITHINK X video (ytdk012) yielded evidence for only three functions, with no instances of establishing common ground (Chart 03).

**Chart 02** Code Frequency Functions of Grounding in interactions of video 002 (Junge Freiheit)



In the Junge Freiheit discussion threads, the negation of common ground emerged as the most frequent function, followed closely by the refusal to negotiate it, suggesting a strong overall orientation toward misalignment. Establishing common ground, by contrast, was the least frequently attested function, even though its presence in the data indicates that even in highly polarised exchanges, some interactants engage in cooperative grounding behaviour.

**Chart 03** Code Frequency Functions of Grounding in interactions of video 012 (MAITHINK X)



The *MAITHINK X* discussion threads display a different distribution of grounding functions. The negation of common ground again represents the most frequent function, while refusal to negotiate it was the least frequently attested. Overall, participants explicitly display uncommon ground, yet some attempts at negotiation indicate at least minimal engagement with differing perspectives.

A closer comparison of the two threads suggests that the topic, framing, and likely audience of each video correlate with different configurations of grounding practices. The Junge Freiheit video, associated with an explicitly right-wing political outlet, displays a particularly high frequency of both negation and refusal to negotiate common ground, reflecting an interactional environment in which participants appear strongly entrenched in opposing stances with little inclination to seek alignment. The *MAITHINK X* video, by contrast, is linked to a science communication channel oriented toward rational debate, which may account for the relatively lower frequency of refusal to negotiate common ground and the presence of negotiation attempts, even in the

absence of established common ground. These differences indicate that the discursive context and the ideological framing of the source content may shape the range and salience of grounding strategies available to participants.

At the level of linguistic markers, the overall distribution across both threads points to the emotionally charged and confrontational nature of these interactional contexts. Markers of misalignment and interrogative forms are more frequently attested than discourse particles, modal particles such as *ja* and *doch*, or temporal connectives — resources that typically function to signal shared understanding or sequential coherence in cooperative discourse. The relative infrequency of these latter markers is consistent with what may be described as defective grounding contexts, in which the affective and ideological investment of participants impedes the collaborative construction of common ground. This pattern underscores the extent to which online discourse, particularly around polarised topics, constitutes a structurally distinct interactional environment that places specific demands on the grounding process.

## 5 Discussion

### 5.1 Interpretation of Main Findings

#### 5.1.1 The Asymmetry Between Video Threads: Absence of Establishing Common Ground in Video 012 from MAITHINK X

The analysis reveals distinct patterns in grounding practices across the two YouTube comment threads. Video 002 (Junge Freiheit) displays evidence for establishing, negotiating, negating, and refusing common ground, whereas video 012 (MAITHINK X) lacks any instances of the establishing function, accounting for 6.15% of interactions solely in the former. This asymmetry warrants careful interpretation, as it suggests that the conditions under which grounding proceeds are not uniform across polarised contexts, but are shaped by the discursive and ideological framing of the source material and the composition of its audience.

Several interrelated factors may account for this divergence. First, the two channels occupy markedly different positions in the German media landscape. Junge Freiheit functions as a conservative outlet whose audience may be expected to share certain political and epistemological orientations, particularly regarding sex and gender. The video's title, "*Bio-Proferklärt: Warum es nur zwei Geschlechter gibt*", frames the topic as an assertion of a settled fact, inviting alignment from viewers who already endorse this position. Under these conditions, it is plausible that a subset of participants enters the discussion with sufficiently overlapping presuppositions to engage in cooperative grounding behaviour. The instances of establishing common ground identified in the data— characterised by expressions of agreement, stance-alignment emojis, and affirmative discourse particles—are consistent with this interpretation. These markers suggest that at least some participants recognised one another as sharing a common epistemic and evaluative framework, enabling them to ratify contributions and treat propositions as mutually accepted.

By contrast, the MAITHINK X video operates within a science communication framework oriented towards public education. Its title, "*Wie viele Geschlechter gibt es?*", poses an open question rather than asserting a definitive answer, thereby inviting engagement from viewers with diverse perspectives on sex and gender. The resulting audience is likely more heterogeneous in its presuppositions, drawing individuals who support the video's nuanced framing alongside those who fundamentally contest it. In such a setting, the baseline conditions for establishing common ground appear to be absent: participants do not share the minimal presuppositional overlap required to treat any proposition as mutually accepted from the outset.

Theoretically, this absence in video 012 aligns with Peet's (2021) notion of persistent defective contexts, where presuppositional misalignment resists repair due to incompatible baseline assumptions. Without markers like stance alignment expressions or affirmative particles (e.g. "Amen!"), participants in video 012 enter interactions without a shared epistemic foundation, suggesting structurally blocked grounding. Such fundamentally incompatible presuppositions, as seen in the lack of positive evidence, may indicate hermeneutical impasses where no common ground can be presupposed or built.

#### 5.1.2 Dominance of Conflict-Oriented Grounding Functions

A central finding across both datasets is the overwhelming dominance of the "negating common ground" function, demonstrating that interactions in these spaces are fundamentally conflict-driven. However, the specific configurations of conflict vary. In video 002, there is a nearly equal distribution between negating common ground and an outright refusal to negotiate it, reflecting the highest degree of polarisation and entrenchment. In contrast, video 012 pairs high negation with a relatively higher frequency of negotiation attempts, indicating lower levels of strict refusal.

Interpreting through grounding theory, the prevalence of negation over establishment challenges assumptions of cooperative intent, revealing how conflict-oriented functions sustain discourse without resolution. These patterns indicate that even when interactants lack established common ground (as in video 012), negotiation still occurs, but it proceeds strictly from a contested foundation rather than a shared one. The high rate of refusal in video 002 reflects an interactional environment where participants are deeply entrenched in opposing stances, exhibiting little willingness to engage in collaborative meaning-making. Such findings empirically manifest

Könneker's (2020) characterisation of social media as a motor for societal polarisation, where scientific topics are subsumed by emotionalised and identity-oriented discourse.

### 5.1.3 Marker Distribution: Questions and Misalignment Indicators Dominate

The distribution of formal markers across both discussion threads reveals a clear preponderance of indicators associated with misalignment and conflict. Markers of stance misalignment, negation, directives, insults, sarcasm, and mockery are far more frequently attested than those typically associated with collaborative grounding—discourse particles, modal particles, temporal connectives, or expressions of stance alignment. This pattern is consistent with what Diedrichsen (2023) describes as the conditions of emergent common ground in anonymous online settings, where the absence of shared socio-cultural backgrounds necessitates explicit and often confrontational signalling.

Particularly noteworthy is the prominence of questions within the marker inventory. Questions constitute one of the most frequently coded categories, yet their distribution across types reveals that they serve as predominantly conflict-oriented rather than information-seeking functions. Rhetorical questions assert positions without seeking uptake, incredulity questions mark surprise at opposing views (e.g., *Was ist so schwer daran, das zu verstehen?* (What is so difficult to understand about this?)), leading questions strategically push presuppositions, and information-seeking questions rarely complete three-turn grounding sequences. Follow-up questions appear, but fail to prompt repair, underscoring constant divergence signalling.

Taken together, these findings mark a substantial departure from the model of grounding articulated by Clark and Brennan (1991), in which acknowledgments, relevant next turns, and continued attention constitute the primary forms of positive evidence. In the present data, these collaborative mechanisms are largely absent. Instead, what emerges is a grounding environment dominated by negative evidence—signals that common ground has not been established, is being contested, or is being explicitly rejected. This observation supports Diedrichsen's (2023) argument that emergent common ground in online contexts must be understood as dynamically and often conflictually constructed through markers that flag misalignment and impending updates. However, the present data extends this account by suggesting that in highly polarised discussions, the function of these markers shifts: rather than preparing the ground for the integration of new information into a shared knowledge base, they primarily serve to externalise and entrench disagreement. The constant marking of divergence thus becomes the dominant mode of interaction, replacing the incremental, collaborative construction of mutual understanding that grounding theory traditionally assumes.

## 5.2 Theoretical Contributions and Implications

### 5.2.1 Extending Grounding Theory to Defective Contexts

The findings challenge Clark and Brennan's (1991) presupposition of shared communicative interest that participants are engaged in a fundamentally collaborative enterprise: they seek positive evidence of understanding, follow the principle of least collaborative effort, and work incrementally to bring their contributions into the common ground. This supports Peet's (2021) thesis of ubiquitous, repair-resistant defective contexts, where hermeneutical impasses arise from epistemic incompatibility rather than mere divergence. Peet contends that attempts to align presuppositions can fail or prove impossible to achieve where deep social or conceptual divides exist, and that such failures may give rise to hermeneutical impasses in which the very resources for renegotiating presuppositions are blocked by entrenched worldviews.

The present data provides concrete linguistic evidence for this theoretical claim. The absence of establishing markers in the MAITHINK X thread, combined with the prevalence of negation and refusal markers across both threads, suggests that participants in these discussions operate within fundamentally incompatible epistemic frameworks. Participants may recognise misalignment but lack resources to bridge it, evidenced by negotiation from zero shared ground.

This observation has implications for how grounding theory might be extended. Where Clark and Brennan (1991) conceptualise grounding as a process oriented toward the accumulation of common ground, the present data suggests the need for a complementary account of what might be termed *grounding under epistemic incompatibility*—situations in which participants engage in recognisable grounding behaviours (posing questions, marking stances, signalling misalignment) without any trajectory toward alignment. In such contexts, grounding markers continue to function as interactional resources, but their pragmatic orientation shifts from collaborative construction to the demarcation and reinforcement of divergent positions. This extension does not invalidate Clark and Brennan's model, but rather identifies the boundary conditions under which its cooperative assumptions cease to apply.

### 5.2.2 Platform Affordances and Grounding Failure

The interactional patterns described in the preceding sections do not arise solely from the ideological commitments or communicative dispositions of individual participants. They are also shaped by the structural affordances of the platform on which they occur. As Clark and Brennan (1991) emphasise, grounding is not

medium-independent; the means and constraints of a given communication channel fundamentally condition the grounding process. The YouTube comment section, as the medium of interaction in this study, introduces several affordances that systematically affect how grounding can proceed—and, in polarised contexts, how it can fail.

Disrupted adjacency enables users to selectively engage with an opponent's arguments, responding only to highly attackable points while ignoring broader context. The persistent text archive facilitates delayed attacks without the immediate interactional accountability present in synchronous speech. Consequently, @-addressing functions less as a tool for genuine dialogue and more as a targeting mechanism for confrontation.

The complete absence of continued attention cues removes any communicative pressure for collaborative repair. These linguistic manifestations confirm Bucher's (2020) analysis that platform structures inherently favour emotionalisation and identity work over rational deliberation. Furthermore, the psychological mechanisms detailed by Könniker (2020)—such as confirmation bias, partisan bias, and the backfire effect—are made visible in the discourse through the active refusal of grounding and the resulting communicative blockages.

## 6 Conclusion

This study examined the linguistic dynamics of establishing mutual understanding in polarised online debates about sex and gender. It revealed that this process fundamentally diverges from face-to-face interaction on social media. Analysis of comment threads from the channels Junge Freiheit and MAITHINK X shows that, in these contexts, grounding is not a collaborative effort to minimise misunderstanding; rather, it is a contested practice dominated by 'negative evidence'. Negative evidence prevailed across both datasets, with negotiation attempts yielding minimal positive evidence (e.g. discourse particles and relevant answers) and outright refusal being common in entrenched exchanges. Cooperative establishment occurred rarely (6.15% in the Junge Freiheit thread via stance alignment and affirmatives). Questions were frequent but rarely completed three-turn grounding sequences; they primarily signalled divergence rather than repair, confirming the dominance of misalignment in defective contexts.

The core insight is that the canonical grounding model (Clark and Brennan 1991) inadequately captures online polarisation, where emergent common ground (Diedrichsen 2023) evolves into conflict via novel markers such as incredulity questions and fixed assertions. This study empirically extends pragmatics to platform-mediated science debates, documenting framing asymmetry: conservative assertions foster limited alignment, whereas nuanced science invites more negotiation among diverse audiences.

The findings of this study should be interpreted considering its methodological limitations. The small qualitative sample size necessarily limits the generalisability of the observed grounding patterns to a broader population. Additionally, the analysis focused exclusively on the linguistic markers within the comment threads and did not analyse the video content itself as a semiotic resource, despite participants frequently referencing it in their contributions. Future research should address these limitations by conducting comparative cross-platform analyses to determine the impact of different algorithmic architectures and community guidelines on grounding behaviours. A multimodal grounding analysis that systematically evaluates both video semiotics and user comments would be essential for achieving a more comprehensive understanding.

Overall, this study reveals that polarised online debates about science are not merely characterised by a lack of common ground; they actively generate and perpetuate uncommon ground through systematic linguistic means. Understanding these dynamics is essential for two reasons: first, for pragmatic theory, which must account for communication under conditions of epistemic incompatibility; and second, for any effort to reclaim digital spaces as sites of genuine public deliberation on matters of scientific and social significance.

## References

- Artstein R (2002) A focus semantics for echo questions. In: Bende-Farkas Á, Riester A (eds) *Proceedings of the Workshop on Information Structure in Context, IMS*, p 98–107
- Bertomeu N, Uszkoreit H, Frank A, Krieger H-U, Jörg B (2006) Contextual phenomena and thematic relations in database QA dialogues: Results from a Wizard-of-Oz Experiment. In: Webb N (ed) *Proceedings of the Interactive Question Answering Workshop at HLT-NAACL 2006*, Association for Computational Linguistics, p 1–8
- Bou-Franch P, Lorenzo-Dus N, Blitvich P G-C (2012) Social Interaction in YouTube Text-Based Polylogues: A Study of Coherence: A Study of Coherence. *Journal of Computer-Mediated Communication*, 17(4), 501–521, <https://doi.org/10.1111/j.1083-6101.2012.01579.x>
- Bucher H-J (2020) Zwischen Deliberation und Emotionalisierung: Interaktionsstrukturen in Sozialen Medien. In: Marx C, Lobin H, Schmidt A (eds) *Deutsch in Sozialen Medien*, De Gruyter, p 123–146, <https://doi.org/10.1515/9783110679885-007>
- Caponigro I, Sprouse J (2007) Rhetorical questions as questions. In: Puig-Waldmüller E, McNally L (eds) *Proceedings of Sinn und Bedeutung 11*, Universität Pompeu Fabra, p 121–133
- Clark H H (1996) *Using language*. CUP.
- Clark H H, Brennan S E (1991) Grounding in communication. In: *Perspectives on socially shared cognition* (American Psychological Association), p 127–149, <https://doi.org/10.1037/10096-006>
- Cohen A (2007) Incredulity questions. *Proceedings of the 11th Workshop on the Semantics and Pragmatics of Dialogue*, 133–140.
- Condon S L, Cech C G (2007) Ok, Next One: Discourse Markers of Common Ground. In: Fetzer A, Fischer K (eds) *Lexical Markers of Common Ground*, Elsevier, p 17–45
- Dayal V (2016) *Questions*. Oxford University Press, <https://doi.org/10.1093/acprof:oso/9780199281268.001.0001>

- Diedrichsen E (2023) Grounding emergent common ground: Detecting markers of emergent common ground in a YouTube discussion thread. In: *Common Ground in First Language and Intercultural Interaction*, De Gruyter Mouton, p 105–133
- Dreesen P (2019) Ausdrücke in Anführungszeichen als Verfestigungen. Überlegungen zu quantitativen und qualitativen Aspekten distanzierenden Sprachgebrauches. *Linguistik Online*, 96(3), 25–41, <https://doi.org/10.13092/lo.96.5532>
- Fetzer A, Fischer K (2007) Introduction. In: Fetzer A, Fischer K (eds) *Lexical Markers of Common Ground*, Elsevier, p 1–13
- Fischer K (2007) Grounding and Common Ground: Modal Particles and their translation equivalents. In: Fetzer A, Fischer K (eds) *Lexical Markers of Common Ground*, Elsevier, p 47–66
- Geilfuß-Wolfgang J (2019). Was ist das denn?! Über die Kombination aus Fragezeichen und Ausrufezeichen. In: Finkbeiner R (ed) *Expressivität im Deutschen*, De Gruyter, p 295–312, <https://doi.org/10.1515/9783110630190-012>
- Han C (2002) Interpreting interrogatives as rhetorical questions. *Lingua*, 112, 201–229.
- Ilie C (1999) Question-response argumentation in talk shows. *Journal of Pragmatics*, 31(8), 975–999. [https://doi.org/10.1016/S0378-2166\(99\)00056-9](https://doi.org/10.1016/S0378-2166(99)00056-9)
- Ilie C (2022) Strategic questioning. In: Fahnestock J, Harris R A, Ilie C (eds) *The Routledge Handbook of Language and Persuasion*, 1st edn, Routledge, p 165–189
- Kirschner M, Bernardi R (2007) An empirical view on IQA follow-up questions. In: Bunt H, Keizer S, Paek T (eds) *Proceedings of the 8th SIGdial Workshop on Discourse and Dialogue*. Association for Computational Linguistics.
- Klockow R (1980) *Linguistik der Gänsefüßchen: Untersuchungen zum Gebrauch der Anführungszeichen im gegenwärtigen Deutsch*. Haag und Herchen.
- Könneker C (2020) Wissenschaftskommunikation und Social Media: Neue Akteure, Polarisierung und Vertrauen. In: Schnurr J, Mäder A (eds) *Wissenschaft und Gesellschaft: Ein vertrauensvoller Dialog. Positionen und Perspektiven der Wissenschaftskommunikation heute*, Springer, p 25–46 <https://doi.org/10.1007/978-3-662-59466-7>
- Macagno F, Capone A (2016) Uncommon ground. *Intercultural Pragmatics*, 13(2), 151–180. <https://doi.org/doi:10.1515/ip-2016-0007>
- Meibauer J (1986) *Rhetorische Fragen*. De Gruyter.
- Okada M (2007) Whose Common Ground? A Misunderstanding Caused by Incorrect Interpretations of the Lexical Markers of Common Ground. In: Fetzer A, Fischer K (eds) *Lexical Markers of Common Ground*, Elsevier, p. 183–194
- Peet A (2021) Defective Contexts. In: Sterken R, Khoo J (eds) *The Routledge handbook of social and political philosophy of language*, Routledge, p. 193–207 <https://doi.org/10.4324/9781003164869>
- Penagos C R (2007) A Common Ground for Knowledge Through Knowledge of Language: A Computational Research of Consensus-based Meaning in Scientific Papers. In: Fetzer A, Fischer K (eds) *Lexical Markers of Common Ground*, Elsevier, p 89–111
- Pittner K (2007) Common Ground in Interaction: The functions of medial doch in German. In: Fetzer A, Fischer K (eds) *Lexical Markers of Common Ground*, Elsevier, p 67–87
- Putterer E (2023) „Schöne Klimaprosa“, „unnötig dramatische Rhetorik“ und „Blablabla“: Sprachthematizierende Äußerungen und metadiskursive Reflexionen im deutschen Klimawandeldiskurs. *Linguistik Online*, 123(5), 49–70. <https://doi.org/10.13092/lo.123.10549>
- Rohde H (2006) Rhetorical questions as redundant interrogatives. *San Diego Linguistics Papers*, 2, 134–168
- Schöpsdau K (1996) Frage, rhetorische. In: Ueding G (ed) *Historisches Wörterbuch der Rhetorik*, Wissenschaftliche Buchgesellschaft, p 445–454
- Stalnaker R (2002) Common ground. *Linguistics and Philosophy*, 25(5–6), 701–721
- Tenbrink T (2007) Imposing Common Ground by Using Temporal Connectives: The Pragmatics of Before and After. In: Fetzer A, Fischer K (eds) *Lexical Markers of Common Ground*, Elsevier, p 113–139
- Walton D N (1995) *A pragmatic theory of fallacy*. University of Alabama Press