

An Affinity for Alignment: Spontaneous Convergence of Stance-Taking in Topical Conversations

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Abstract

Alignment in stance-taking is a foundational behavior in conversation, but few studies have quantified the degree to which conversationalists converge in their attitudes toward a topic. We attempted to quantify this convergence in terms of three parameters related to alignment: intensity (low to high), prevalence (percentage of time in alignment), and content (use of open-ended versus closed-ended statements). To examine the utility of these parameters, we compared the content of conversations between unacquainted dyads in either a free conversation condition or a topical condition in which the individuals were mismatched for their attitude toward the topic to maximize disalignment between them. The results revealed that, paradoxically, the dyads in the topical condition showed a higher degree of alignment along all three parameters than did the dyads in the free condition. This finding may reveal a general tendency for people to seek out common ground during first-contact encounters.

Keywords: *alignment, stance-taking, conversation, cooperation, cohesion*

Date Submitted: March 6, 2025 | **Date Published:** October 27, 2025

Recommended Citation

Tu, C., Zoutis, S., & Brown, S. (2025). An affinity for alignment: Spontaneous convergence of stance-taking in topical conversations. *Journal of Social, Behavioral, & Health Sciences*, 19, 1–24.
<https://doi.org/10.5590/JSBHS.2025.19.1752>

Introduction

First-encounter conversations play a critical role in setting the foundation for relationship formation, whether personal or professional. These initial interactions often shape perceptions and determine whether two

individuals will continue to engage with one another (Denrell, 2005; Hays, 1984). This is especially important since speakers sometimes judge one another based on short interactions (Ambady & Rosenthal, 1993; Willis & Todorov, 2006). The ability to initiate meaningful and thoughtful conversations helps individuals connect on a deeper level by revealing shared values, interests, or goals (Huang et al., 2019; Laursen, 2017; Ledbetter et al., 2007). In professional settings, first conversations can influence hiring decisions, client relationships, or team dynamics (Black & Vance, 2021; Gersick, 1988; Mulvey et al., 1998). In personal life, they can lay the groundwork for friendships or romantic relationships (Baker et al., 2024; Human et al., 2012; Kerr et al., 2020). Poorly managed first encounters, those marked by judgment, disinterest, or miscommunication, can discourage speakers from seeking further interactions for connection (Hamilton & Zanna, 1972; Peeters & Czapinski, 1990). Therefore, being attentive, engaged, and aligned in these early interactions is vital for relationship formation and maintenance (Davis & Rusbult, 2001; Reid et al., 2013).

First-encounter conversations may take the form of a directionless interaction in which speakers jump from one topic to another, or they can occur within a specific context, such as a first encounter at a bookstore, which may constrain the topic of the conversation. In either type of first-encounter conversation, speakers may try to probe one another's interests, stances, and values in order to gauge compatibility (Baxter et al., 2022). As such, it would be useful to understand how a speaker comes to recognize that her interlocutor shares similar stances and values and how the speaker subsequently navigates a conversation if she learns that her stances are dissimilar from her interlocutor's. More specifically, the current study seeks to quantify the degree of stance-taking alignment in a conversation. We do this by examining whether there is a difference in the prevalence and intensity of alignment between speakers who engage in a free conversation compared to those who engage in a conversation about a topic for which they have opposing stances going in.

Stance-Taking and Affective Alignment

“Stance-taking” is the social act in which interlocutors express their attitude toward an object, person, or topic (Du Bois, 2007). Speakers can take an affective position when expressing their stance, such as by saying “I’m glad” to express a positive position, or by saying “I’m disappointed” to express a negative position (Du Bois, 2007). As such, “stance” is also referred to as affective stance, appraisal, attitude, or mood in emotion theory (Chindamo et al., 2012; Gales, 2011; Goodwin et al., 2012; Gray & Biber, 2012; Martin, 2000). Stance-taking is a dialogic and intersubjective process in which a speaker's stance is not only a response to what was previously said by the other speaker during the conversation, but it can also influence the other speaker's subsequent turns (Argyle, 1980; Du Bois & Kärkkäinen, 2012).

Du Bois (2007) described the interactive process of stance-taking as a communicative act with three components: evaluation, positioning, and alignment. First, evaluation is the act of characterizing an object or topic as possessing a specific quality, such as a speaker describing a novel as having a complex plot. Second, positioning is the act of taking an affective position on the topic, such as a speaker expressing a liking toward the novel. Finally, alignment is the convergence in the evaluative positions of both speakers to create a joint affective stance, such as when two speakers agree that they both like the novel (Du Bois, 2007; Du Bois & Kärkkäinen, 2012). As such, this type of alignment is also known as “affective alignment” because it involves the alignment of the emotional stances of the interlocutors.

Affective alignment can devolve into disalignment (i.e., disagreement) when the speakers have different attitudes toward a given object, thereby creating a conflict between them that they may work to resolve (Bolden & Robinson, 2011; Stokoe et al., 2020). Disalignment is different from misalignment, which is when speakers have mismatched situation models (Pickering & Garrod, 2006). Speakers can be affectively aligned (e.g., liking the same novel) but situationally misaligned (e.g., one speaker refers to the novel as a science fiction, while another speaker refers to it as a romance). Likewise, speakers can be both affectively disaligned (e.g., one likes the novel but the other does not) and situationally misaligned (e.g., both speakers assume that

they are talking about the same novel, but they are actually referring to different novels). Affective disalignment is, therefore, a shared emotional state between interlocutors, while misalignment is when there is a mismatch in the way that speakers describe and interpret a subject, which can subsequently lead to misunderstandings between speakers (Haddington, 2005; Strough & Berg, 2000).

Affective alignment differs from the related process of “structural” alignment, which is the willingness of both speakers to cooperatively maintain the flow of the conversation (Jefferson, 1984; Lee & Tanaka, 2016; Schegloff, 1982; Stivers, 2008). Structural alignment is often accomplished through back-channel responses such as “yup,” “mhmm,” and “uh huh” to encourage the other speaker to continue as well as through longer acknowledgment responses such as “I understand” and “That’s great” to establish common ground between speakers (Clark & Brennan, 1991; Jefferson, 1984; Schegloff, 1982; Stivers, 2008). Structural alignment is also dependent on “speech-style processing,” in which speakers assess each other’s style of speech throughout a conversation (e.g., playful, quick, domineering) and adapt their own style accordingly (Ward & Avila, 2023). Affective alignment is also different from “epistemic” alignment, which is the similarity of knowledge about a topic between speakers (Du Bois & Kärkkäinen, 2012). Epistemic alignment can occur prior to affective alignment because speakers may first establish that they have shared knowledge about a topic (i.e., “Have you read this book?”) before revealing their stances about the topic.

A Different Type of Convergence

“Affective alignment” is not to be confused with “linguistic alignment,” or what can be thought of as linguistic convergence. While affective alignment is the agreement of stances between interlocutors, linguistic convergence is the degree of linguistic similarity that occurs as a result of automatic and unmediated priming of linguistic information from previous utterances (Garrod & Pickering, 2004). According to Pickering and Garrod’s (2004) interactive alignment model, linguistic convergence at lower levels of mental representation, such as the phonological, lexical, and syntactic levels, led to cognitive convergence at the higher level, where there is an alignment of situation models. For example, when a speaker says, “Kyle was a brute. Wasn’t considerate at all,” to describe a character in a novel, and another speaker responds and says, “Not a team player in the slightest,” there is alignment on both a linguistic level and an affective level. Speaker A drops the subject at the beginning of the second sentence when referring to Kyle, and speaker B mimics this syntactic structure by also not using a subject in their response sentence. Speaker B also ends the sentence with, “in the slightest” to mimic speaker A’s syntactic structure of ending the sentence with “at all” to express emphasis. Both speakers are aligned in their stances because they both have negative stances about Kyle. Computational methods for analyzing linguistic convergence, such as the Linguistic Inquiry and Word Count (LIWC), are the most common methods for analyzing overall lexical alignment in conversation (Babcock et al., 2014; Cannava & Bodie, 2016; Niederhoffer & Pennebaker, 2002).

Linguistic convergence is one type of behavioral convergence that can be explained by communication accommodation theory (Giles & Ogay, 2007). Other types of behavioral convergences include similarity of facial and body movements (Seibt et al., 2015) and entrainment of body sway (Richardson et al., 2008). Communication accommodation theory describes the phenomenon when people adjust their style of behavior to become similar to those with whom they are communicating as a way of “accommodating” the communication style of their interaction partner(s) (Giles & Ogay, 2007). However, communication accommodation can occur independently of alignment because two speakers can demonstrate behavioral convergence despite having dissimilar stances (Kabbach & Herbelot, 2021). Some speakers may also converge when they are disaligned in their stances in order to be more persuasive and appear less aggressive (Kulesza et al., 2015; Van Swol, 2003). Communication accommodation can, therefore, be performative, but people still tend to strive to be authentic when expressing their views (Edwards & Fasulo, 2006; Eriksson, 2010). In addition, people can choose to form relationships with individuals who have dissimilar opinions (Poteat et al., 2011). Finally, disagreement can be a basis for how people learn from one another (Angouri, 2012).

Quantifying Stance-Taking Alignment

Conversation analysis in the field of linguistics and computational studies has typically focused on measuring the convergence of features such as prosody, lexical choice, syntax, speech rate, and other quantifiable speech behaviors (Cannava & Bodie, 2016; Garrod & Pickering, 2004; Manson et al., 2013; Vaughan, 2011). This convergence is also known as “language style matching” (Abney et al., 2014; Manson et al., 2013). However, while the convergence of linguistic behaviors is an indicator of cooperation and conformity, it reveals little about the emotional connectedness between interlocutors that may occur through the sharing of affective stances toward a topic.

Kiesling et al. (2011) and Biber and Finegan (1989) critiqued the use of lexicon-based methods, such as LIWC, for measuring affective alignment, since words and phrases can take on meanings contrary to their literal definition, depending on the context in which they are used. Thus, linguistic convergence may not always accurately reflect the underlying cognitive alignment that occurs during conversation (Duran & Fusaroli, 2017; Riordan et al., 2014). Analyses of conversational alignment should instead determine how affect is expressed and aligned as a form of interactional stance-taking (Chindamo et al., 2012). For instance, the word “thank” was associated with both high affect and high alignment in Kiesling et al.’s (2011) textual analysis of online conversation threads from Reddit. However, because the study used a corpus of online textual conversations, the coders could only rely on linguistic cues to determine stance. In face-to-face conversations, stance is context dependent and multimodal and is not restricted to grammatical choices. The word “thank” can also be used ironically, such as in the phrase, “Thanks a lot,” when a speaker wants to express exasperation and sarcasm toward another speaker who has caused inconvenience. Instead, a holistic analysis of affective stance should, therefore, consider the integration of linguistic and contextual markers.

In the current study, we introduce another feature of alignment that we call “alignment content,” which refers to the discursive acts that describe how extensively and thoroughly speakers express agreement (or disagreement) with one another (see Table 1). A conversation with a high degree of alignment content implies that the speakers are expressing alignment using more elaborative utterances as opposed to definite utterances. Elaborative utterances can also be referred to as “open-ended” alignment acts because the speaker shares additional information after expressing agreement and calls for further exploration of the topic. For example, a speaker is expressing an open-ended alignment act when she says “That’s a really good point. It also reminds me of the time when my friend did something similar.” This additional information opens up the topic by providing an opportunity for the speakers to continue exploring the topic from a new perspective.

Table 1. *A 2x2 Categorization of Open-Ended and Closed-Ended Alignment and Disalignment Acts*

	Open-ended acts (Elaborative responses)	Closed-ended acts (Definite responses)
Alignment acts	“Yes, I agree. And also . . .” “Yes, but have you considered . . .”	“Yes, I agree.” “That’s a good point.” “I like that idea you proposed.” “I guess you’re right.”
Disalignment acts	“No, but we can try to think about it this way . . .” “No, I don’t agree, but we can talk about it . . .”	“No, I don’t agree.” “I don’t see it the same way you do because . . .”

Note. Open-ended acts are elaborative responses, while closed-ended acts are definite responses. Examples of each type of act are listed.

Similarly, a conversation with a high disalignment content would mean that speakers are expressing a greater amount of open-ended disalignment acts, such as saying, “No, I don’t like that dress, but if you added a belt it might work.” On the other hand, “closed-ended” alignment acts limit the conversational trajectory by creating definite responses to another speaker’s stance. For instance, when a speaker simply says, “Yes, I agree. That’s a good point,” the speaker has implicitly declined to elaborate further on her stance on that topic and is redirecting the conversation back to the other speaker.

The alignment and disalignment acts that we introduce in this paper differ from other discursive acts, such as speech acts (Searle, 1979), in that the two categories of disalignment acts refer to the potential effect that the acts have on the conversational flow. Open-ended acts facilitate the exploration of new conversational topics, similar to the way that “yes, and” in improvisational theatre promotes the exploration of spontaneous creative ideas (Aylesworth, 2008), while closed-ended acts may make the exploration of new ideas more effortful. Alignment prevalence and intensity are descriptive measures, but they do not indicate *how* the speakers are aligning and the mechanisms that the speakers use to establish alignment. As such, identifying discursive acts can help reveal the process by which speakers align and disalign with one another. Table 1 lists the four categories of alignment and disalignment acts and includes examples of each type in quotations.

Objectives and Predictions

Based on the review of the literature above, a large focus of the conversation-analysis literature is on behavioral convergences, specifically linguistic convergence. However, while linguistic convergence can be a marker of stance-taking convergence, this is not always the case, and alignment should be analyzed as a separate type of convergence behavior. To our knowledge, few studies have directly measured and analyzed alignment and disalignment in conversation in the way that we proposed. As such, the primary objective of this study was to quantify three dimensions of disalignment (intensity, prevalence, and content) as a form of prosocial behavior in a second-by-second manner by manually annotating 12-minute conversations between 23 dyads, occurring over a Zoom call. We wanted to do this by comparing the disalignment behaviors between dyads in a prompted condition in which they engaged in a topical conversation and dyads in a free condition, where they were given free rein to discuss any topic they liked. Each of the 23 dyads consisted of pairs of strangers who were meeting for the first time.

The strangers were peers who had similar statuses (i.e., similar age, same gender, similar education background) in order to minimize behavioral asymmetries that may occur due to power imbalances from different statuses, in which a speaker of a “higher” status may influence the stance of the other speaker (Brewer et al., 2002; Rahim, 1986). In the topical condition, speakers were paired based on their differing viewpoints on the assigned topic of conversation. Therefore, dyads in this condition were expected to be more disaligned than those in the free condition, who were expected to show positive alignment values, in keeping with people’s prosocial tendencies during first-encounter conversations (Van Lange et al., 1997). However, we predicted that dyads in the topical condition might show a greater frequency of open-ended discursive acts, supporting a need of the speakers to elaborate on their stances and to persuade their conversational partner of their viewpoint. Given the 2x2 structure of alignment content in Table 1, we predicted that this would principally take the form of more open-ended disalignment acts.

Based on these general predictions, we devised six hypotheses regarding the three dimensions of (1) intensity, (2) prevalence, and (3) content for two types of alignment valences: alignment (A) and disalignment (B).

Hypothesis 1 (H1): Intensity

This dimension represents the strength of alignment or disalignment of the stances between speakers. When both speakers have high-intensity stances, this can lead to high arousal when they learn about each other's stance (Cappella & Green, 1984; Gormly, 1974). Two speakers with strong similar stances can lead to high-intensity alignment, and speakers with strong opposing stance may lead to high-intensity disalignment. Two speakers with weak stances may lead to low-intensity alignment or low-intensity disalignment. Because speakers in the topical condition were matched for having a large difference in stances about a topic, we predicted the following:

H1A: Dyads will have lower alignment intensity in the topical condition than in the free condition.

H1B: Dyads will have higher disalignment intensity in the topical condition than in the free condition.

Hypothesis 2 (H2): Prevalence

Two dimensions of emotions that are described by the circumplex model of affect are intensity and valence (Russell, 1980). H1 outlines our predictions for intensity, while H2 outlines our predictions for the prevalence of each type of alignment valence: positive valence (alignment) and negative valence (disalignment). Because speakers in the topical condition were matched for differing stances, we predict that the prevalence of alignment and disalignment should differ between the topical and free conversation conditions, in which dyads in the free condition would err on the side of alignment, and dyads in the topic condition would have a greater prevalence of disalignment.

H2A: Dyads will spend more time in alignment in the free condition than in the topical condition.

H2B: Dyads will spend more time in disalignment in the topical condition than in the free condition.

Hypothesis 3 (H3): Content

This dimension refers to how extensively and elaborately speakers express their alignment or disalignment. Open-ended disalignment acts should accompany in-depth explanations during stance expression. Because the topical condition provides dyads with a specific topic to focus on and explore, this condition should be more conducive for dyads to utilize open-ended acts. Moreover, because it is hypothesized that there will be higher levels of disalignment in the topical condition (H2B), speakers may use open-ended disalignment acts as a means of explaining their reasoning for disalignment to try to persuade the speaker to shift their stance (Di Stasi et al., 2024; Wang et al., 2019).

H3A: Dyads will express fewer open-ended alignment acts in the free condition than the topical condition.

H3B: Dyads will express a higher frequency of open-ended disalignment acts in the topical condition than the free condition.

Methods

Participants

The study sample consisted of 46 female volunteers ($M = 18.5$ years, $SD = 1.9$, range = 17–29 years), who participated in exchange for course credit. This sample size is within range of samples collected in similar studies about conversational dyads, which involve 20 to 40 participants (Abney et al., 2014; Duran et al., 2019; Freeman, 2019). Ten male participants also participated in the study. However, their data were ultimately omitted from the sample because there were not enough male dyads to distribute across both the

free and topical conditions to allow for a comparison of same-sex and mixed-gender dyads. The limitations of this decision are discussed later in the paper.

Participants were recruited from the Research Participation System in the Department of Psychology, Neuroscience & Behaviour at McMaster University. Thirty-two of the participants disclosed that English was their first language. The 14 participants who were non-native speakers declared that their fluency in English was equivalent to or surpassed that of their native language, due to having learned English at an early age in school and that English was their preferred language for conversing. As such, we did not differentiate between native and non-native speakers when pairing participants. Participants, therefore, had similar statuses in terms of their age, gender, and educational background, since the participants attended the same university, were enrolled in the same introductory psychology course, and were in similar STEM (science, technology, engineering, and mathematics) programs. These individuals were told that they would be participating in a study about social interaction, but they were not told that the focus of the study was alignment so as to not bias them toward agreeing or disagreeing with one another during the conversation. We wanted to frame the task as neutrally as possible in order to allow participants to interpret the prompts in whatever direction they liked. This is also why we avoided framing the topical condition as a “debate” because it may have primed the participants to disagree with one another, therefore introducing bias into the study because debates typically carry the connotation of being argumentative. None of the participants reported being acquainted with one another. The study was approved by the McMaster University Research Ethics Board (MREB), and participants provided informed consent to being audio and video recorded before participating.

Procedure

Prior to the study session, participants completed a questionnaire that asked them to provide their opinions on 13 statements, ranging from personal topics (e.g., “You prefer working late over working early. Agree or disagree?”) to ideological topics (e.g., “People have free will. Agree or disagree?”). Participants indicated the degree to which they agreed or disagreed with each statement on a 4-point Likert scale, in which a rating of 4 meant that they strongly agreed with the statement, and a rating of 1 meant that they strongly disagreed with the statement. This is similar to the scale used by Duran and Fusaroli (2017) for their Devil’s Advocate protocol. This 4-point Likert scale forces participants to take a non-neutral stance on each topic.

Participants were matched based on the magnitude of the difference of their opinion on a given topic in order to optimize disalignment. If two participants had an opinion difference of 3 or 2 (e.g., one participant gave a rating of 4 for a statement, while another participant gave a rating of 1 for the same statement), they would be matched to discuss that topic. Participants who were not matched for an opinion difference were assigned to be in the free, unprompted condition, in which they were told that they could discuss any topic they liked. Twenty participants were matched into 10 dyads for the topical condition, while 26 participants were matched into 13 dyads for the free condition. Prior to joining the Zoom call, participants were not told why they were matched together, and those in the topical condition were not told that they had dissimilar opinions on the topic, nor were they told the topic that they would be discussing.

On the day of the session, the two scheduled participants joined a secure Zoom call set up by the experimenter. After explaining the protocol of the study, the experimenter entered a breakout room and left the participants in the main Zoom room and provided them 5 minutes to introduce themselves to one another. After this, the experimenter returned to the main room to introduce the task, which was either to discuss a given topic or to engage in a free conversation for 12 minutes. The experimenter exited the main room again to allow the participants to engage in the conversation, which was recorded. After the allotted 12 minutes, the experimenter provided the participants with a 12-item questionnaire for each of them to privately indicate their individual feelings of engagement (two items) and rapport (four items) with their conversational partner on a 5-point Likert scale. The participants also provided Likert ratings for 20

statements regarding their personality traits and empathic abilities (Davis, 1983; John & Srivastava, 1999; Lee & Robbins, 1995).

Measures

The primary aim of the study was to quantify the degree of disalignment in topical versus free conversations as measured in a second-by-second manner across the 12-minute segment. The study included three main measures. First, we sought to capture the *presence and intensity* of the disalignment using a 3-point integer scale spanning from 1 (low intensity) to 3 (high intensity). This was done by a coder who assessed the presence of a disalignment statement in the conversation and then assigned an intensity value to it (Freeman, 2019). The magnitude for both mean alignment and disalignment intensities can, therefore, be expressed separately but on the same scale of 1 to 3. When neither alignment nor disalignment is present, this indicates the occurrence of neutral stance-taking in which the speakers neither agree nor disagree about the topic. For example, this includes statements that are purely descriptive or inquisitive and that do not express anything affective about the topic. Note also that a high alignment score does not indicate anything about whether people's stances toward the topic are positive (approving) or negative (disapproving). For example, people can be highly aligned in their feeling of disgust toward a politician. So, alignment only reflects the level of (dis)agreement between the interlocutors, not whether their attitudes toward the topic are approving. We also refer to alignment and disalignment as the positive and negative "valences" of stance-taking alignment, respectively.

Second, we measured the *prevalence* of disalignment in a conversation. This was quantified as the percentage of the total conversation time that a dyad spent in either alignment (alignment prevalence) or disalignment (disalignment prevalence), in which the remainder of a conversation is made up of neutral stance-taking.

Third, we measured stance-taking *content* with regard to how elaborately a dyad expressed disalignment during a conversation. As Table 1 indicates, this analysis is based on a 2x2 crossing of alignment/disalignment with open/closed-ended acts, resulting in four sub-parameters. Once a coder identified that alignment or disalignment was present (i.e., the valence of the stance-taking), they would then determine if the disalignment was expressed in the form of open-ended or closed-ended acts. An open-ended act expands the conversation beyond the agreement or disagreement, when a speaker brings in a similar or alternative new idea to explore. On the other hand, a closed-ended act is a definite response in which the speaker ends the topic of discussion with a statement of agreement or disagreement without providing an alternative avenue for further elaboration. The open-ended content of a conversation can be expressed as a percentage of the total number of disalignment acts. For instance, a conversation may have a low percentage of alignment acts out of the total number of alignment + disalignment acts combined, but it can show a high percentage of them being open-ended rather than closed-ended acts. A conversation with a high percentage of open-ended disalignment acts indicates a content-rich conversation in which disalignment is expressed with more depth.

Separate from conversational parameters, per se, we sought to gauge a dyad's affiliative sense of rapport and cohesion at the end of the conversation. Each speaker in the dyad provided a rating on a 5-point Likert scale for the following four statements: (1) I felt connected with my partner during the conversation, (2) I would be willing to have another conversation with my partner, (3) I would be willing to work on a collaborative project with my partner, and (4) I would be willing to help my partner in a time of need. The ratings of the statements were averaged between speakers to yield a cohesion score per dyad.

Analyses

The Zoom recordings were transcribed into text on a spreadsheet in which every speaker's turn would span the same number of rows as the number of seconds that the turn lasted. A 12-minute conversation would, therefore, have a transcript of 720 rows. This formatting of the transcript allowed coders to place their ratings

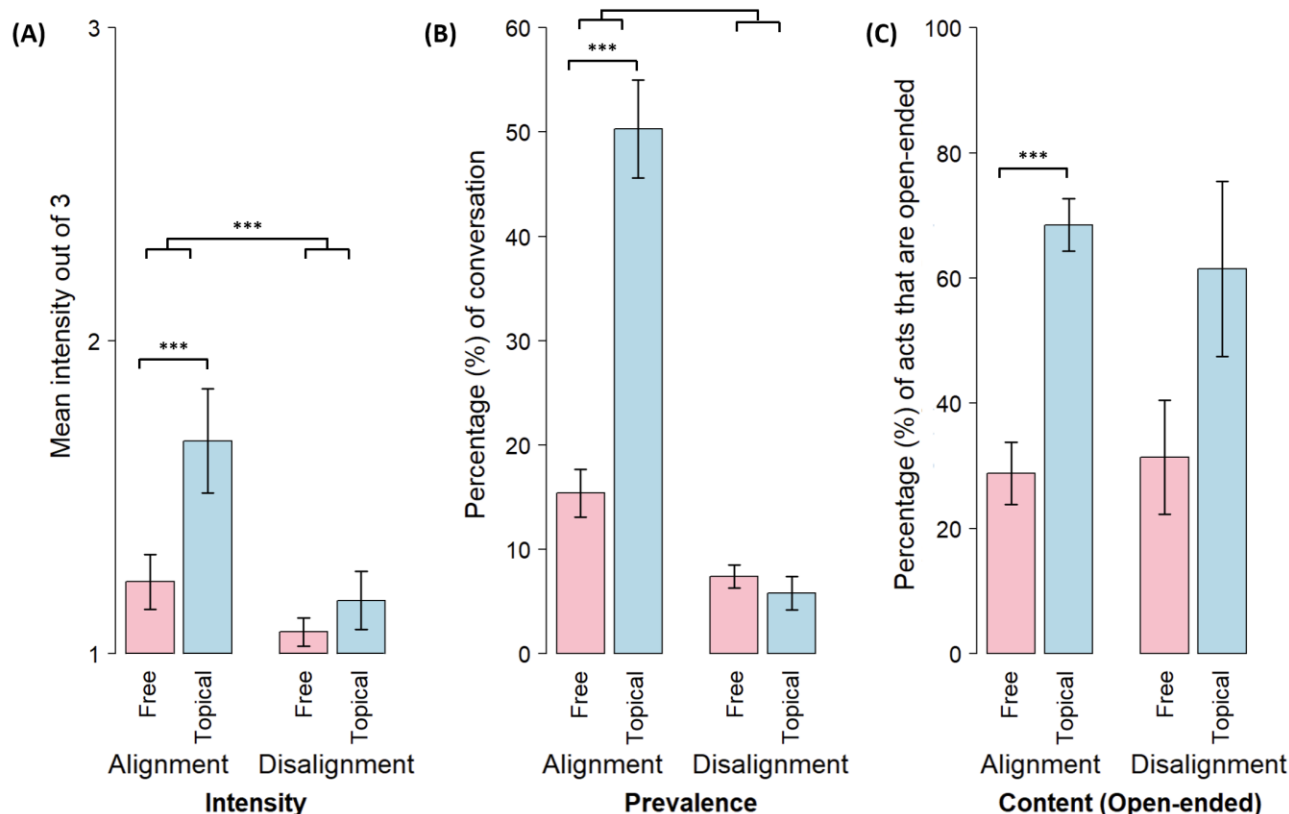
of alignment variables in the adjacent columns, thereby generating a temporal analysis of alignment on a second-by-second basis. Given that alignment is measured dyadically, coders determine whether statements are aligned or disaligned in a pairwise process by considering how each statement in the transcript relates to the previous statement. Seven of the 23 conversations (30%) were analyzed by two coders, who reached a mean Cohen's kappa score of 0.64 across the three measures of alignment, indicating moderately high inter-rater reliability. The remaining 16 conversations were analyzed by one of the two original coders.

The main experimental question was related to the comparison between the dyads in the topical and free conditions for each of the three dimensions of alignment (valence/intensity, prevalence, and content). This was first analyzed via a split-plot analysis of variance (ANOVA) for each dimension, followed by pairwise *t*-test comparisons between conditions, in which the statistical significance level was set to $\alpha < .008$ after Bonferroni correcting for six comparisons. The statistical significance level for the split-plot ANOVA was set to $\alpha < .02$ after Bonferroni correcting for three comparisons.

Results

Figure 1 shows the mean data for alignment and disalignment intensity, prevalence, and open-ended content for dyadic conversations in the free and topical conditions, respectively. We conducted a 2x2 split-plot (mixed design) ANOVA for each of the three dimensions to identify the main effects of conversation type (free versus topical; between-subject), valence (alignment and disalignment; within-subject), and the interaction between conversation type and alignment valence (Type x Valence). We then conducted pairwise *t*-tests to elucidate which comparisons were significantly different.

Figure 1. *Summary of Results Between Dyads in the Free and Topical Conditions for the Two Valences (Alignment and Disalignment) of the Three Dimensions: (A) Intensity, (B) Prevalence, and (C) Content (Acts) That Are Open-Ended*



Note: The percentage of closed-ended acts corresponding to each bar is 100 minus the value shown in (C) because the two sum to the total number of disalignment acts. Error bars indicate standard errors of the mean.

* $p < 0.05$. ** $p < 0.005$. *** $p < 0.0005$.

Intensity

The distinction between alignment (agreement) and disalignment (disagreement) establishes the *valence* of the stance-taking between the speakers, and the intensity for each type of valence can also be examined. There was a significant main effect of valence ($F(1, 21) = 22.78, p = .0001, \eta^2_p = .52$), where the intensity of alignment differed from that of disalignment, regardless of conversation type. However, there was no significant main effect of conversation type ($F(1, 21) = 1.36, p = .26, \eta^2_p = .06$), meaning that there was no difference between alignment and disalignment intensities between the conversation types. However, the Type x Valence interaction was significant ($F(1, 21) = 6.52, p = .019, \eta^2_p = .24$). Post-hoc t -tests revealed that when dyads in the topical condition were in alignment, they had a significantly higher mean intensity rating ($M = 1.68$ on a scale of 3; $SD = 0.60$) than when dyads in the free condition were in alignment ($M = 1.23, SD = 0.27$), $t(22) = 4.29, p < .0005, d = 1.8$ (Figure 1). As such, H1A was not supported. We had predicted that dyads in the topical condition would have lower alignment intensity than those in the free condition due to their matching for disaligned opinions. Next, there was no significant difference in disalignment intensity between the two conversation types, $t(22) = 0.78, p = 0.45, d = 0.35$. Therefore, H2B was not supported.

Prevalence

There was a significant main effect of valence ($F(1, 21) = 63.46, p < .0001, \eta^2_p = .75$) where the prevalence of alignment differed from the prevalence of disalignment, regardless of conversation type. There was also a

significant main effect of conversation type ($F(1, 21) = 35.24, p < .0001, \eta^2_p = .63$). Dyads in the free condition spent only 22.8% of the conversation engaged in some type of stance-taking (i.e., alignment or disalignment) compared to dyads in the topical condition, who spent 56% of the conversation engaged in either alignment or disalignment ($t(22) = 6.28, p < .0005, d = 2.50$). The Type x Valence interaction was also significant ($F(1, 21) = 30.60, p < .0001, \eta^2_p = .59$). Dyads in the free condition spent 15.4% of the conversation, on average, in alignment (Figure 1B; $SD = 7.4\%$). Surprisingly, the dyads in the topical condition—who had been matched for their disagreement on the topic of conversation—spent a significantly *higher* percentage of the conversation in alignment (50.3%; $SD = 1.7\%$; $t(22) = 6.06, p < .0005, d = 2.55$). Hence, H2A was not supported because it was predicted that dyads in the free condition would spend a greater amount of time in alignment than those in the topical condition. In contrast to this difference in alignment prevalence, dyads in the free and topical conditions spent a similar amount of time in disalignment (7.4% and 5.8%, respectively, with $SD = 3.5\%$ and 5.7%), which is contrary to H2B. Dyads in both conditions, therefore, spent more time in alignment than disalignment. Beyond this, dyads in the free condition spent the remaining 77.2% ($SD = 9.9\%$) of the conversation being neutral (i.e., not engaging in stance-taking), whereas dyads in the topical condition spent significantly less time (43.9%, $SD = 15\%$) engaging in neutral conversation ($t(22) = 6.24, p < .0005, d = 2.49$).

Open-Ended Content

On average, 87.8% ($SD = 11.8\%$) of the total number of acts expressed by both speakers in a conversation in the free condition were alignment acts (not shown in the figure), as opposed to disalignment acts (12.2%; $SD = 9.2\%$). For the topical condition, the value for alignment acts was 92.3% ($SD = 9.2\%$). While this difference was not statistically significant ($t(22) = 0.998, p = 0.33, d = 0.42$), a breakdown of the disalignment acts into open- versus close-ended types showed larger differences between conditions. Figure 1C shows this as the percentage of open-ended acts out of the total number of disalignment acts per condition (open + closed). The results of the 2x2 split-plot ANOVA yielded only a significant main effect of conversation type ($F(1, 21) = 15.30, p = .0008, \eta^2_p = .42$), reflecting the fact that there was a greater amount of open-ended stance-taking in the topical condition than the free condition. However, the main effect of valence ($F(1, 21) = 0.38, p = .58, \eta^2_p < .0001$) and the interaction between Type x Valence were not significant ($F(1, 21) = .19, p = .67, \eta^2_p < .0001$). In the free condition, 28.8% ($SD = 15.8\%$) of the alignment acts were open-ended acts, while in the topical condition, 68.5% ($SD = 15.1\%$) of them were ($t(22) = 6.1, p < .0005, d = 2.57$). Similarly, a larger percentage of the disalignment acts expressed by dyads in the topical condition were open-ended (61.5%, compared to 31.4% in the free condition), although this effect was not significant ($t(22) = 1.61, p = 0.121, d = 0.68$). These results support H3B (and not H3A), in which dyads in the topical condition were predicted to express a greater amount of open-ended disalignment acts than those in the free condition.

Cross-Dimension Comparisons

A 2x2x3 split-plot ANOVA was conducted to identify the main effects of conversation type (free versus topical; between-subject), valence (alignment and disalignment; within-subject), and dimension (intensity, prevalence, and valence; within-subject), as well as three interactions: (1) Type x Valence, (2) Type x Dimension, and (3) Valence x Dimension. The assumption of sphericity was met: Mauchly's test of sphericity yielded $p > .05$. Because the three dimensions of alignment and disalignment were measured on different scales, the values were normalized within each factor-level for the two conversational conditions to obtain z-scores that would allow meaningful comparisons across dimensions. Only the main effect of conversation type was significant ($F(1, 21) = 37.70, p < .0001, \eta^2_p = .64$). Figure 1 reveals that topical conversations consistently had higher values of alignment and disalignment across the three dimensions. The only interaction that was significant was the one between conversation type and valence ($F(1, 21) = 15.10, p = .0008, \eta^2_p = .42$). Alignment measures appear to be consistently higher than disalignment measures in the topical condition compared to the free condition, as can be seen in Figure 1.

Additional Measures

Social Cohesion

Dyads in the free and topical conditions reported similar levels of social cohesion. The Likert ratings were averaged to yield a mean cohesion score per speaker. The mean cohesion score per dyad was obtained by averaging the cohesion scores of the speakers in the dyad. Dyads in the free condition had a mean cohesion score of 4.44 (out of 5, $SD = 0.63$), and dyads in the topical condition had a mean cohesion score of 4.43, $SD = 0.33$, $t(22) = 0.03$, $p = 0.979$, $d = .01$.

Engagement

Dyads in the free and topical conditions reported similar levels of engagement. In the post-study questionnaire, participants were asked to rate the extent to which they felt the conversation was stimulating and the extent to which it was easy to keep the conversation going. The Likert ratings were averaged to yield a mean engagement score per dyad. Dyads in the free condition had a mean engagement score of 4.44 (out of 5, $SD = 0.64$), and dyads in the topical condition had a mean cohesion score of 3.96, $SD = 0.68$. $t(22) = 1.66$, $p = 0.11$, $d = .66$.

Discussion

The aim of this study was to quantify alignment between speakers in first-encounter conversations. To do this, we compared the degree of alignment between dyads engaged in free conversations to that of those engaged in topical conversations to determine whether our method for quantifying alignment could identify differences between these two conversation types. Dyads in both the free and topical conditions reported similar levels of interpersonal cohesion, but the levels of alignment differed significantly. This demonstrates that there are perhaps different ways to achieve social cohesion beyond the alignment of stances.

Topical Versus Free Conversations

We predicted that the dyads in the topical condition would engage in a debate-style conversation and have higher levels of disalignment in terms of intensity, prevalence, and open-ended content than dyads in the free condition (H1B, H2B, H3B, respectively), given that they were matched for having opposing viewpoints on the topic. However, they instead took the opportunity to find common ground on the topic. Out of the three hypotheses about the difference in the degree of disalignment between the free and topical conditions, only H3B was supported such that dyads expressed a higher frequency of open-ended disalignment acts in the topical condition than the free condition. This led to the unexpected finding of a higher degree of overall alignment for the topical dyads than the free dyads, which is the opposite of what we had predicted (H1A, H2A, H3A). The paradoxical absence of high levels of disalignment in the topical condition suggests that people engaged in first-time encounters may prioritize the establishment of common ground over the potential dissonance of defending an opinion that is not shared with their conversational partner. This is a noteworthy result because speakers who are matched for disalignment in topical conversations can go either in the direction of disalignment or in the direction of alignment, the latter if the speakers found common ground on the topic. The dyads in the current study chose to go in the direction of alignment. This is an example of people's prosocial inclination to avoid conflict and instead align in order to maintain the harmony of the conversation.

Dyads in the free condition that discussed any topic of their choosing spent, on average, a lower percentage of the conversation time in alignment, had a lower alignment intensity, and used fewer open-ended (elaborative) alignment acts than dyads in the topical condition. Thus, our prediction that free conversations would have higher levels of alignment than topical conversations (H1A, H2A, H3A, respectively) was not supported. While we did not code the types of ideas and topics that the dyads discussed, we noticed that dyads in the free

condition often discussed personal topics on a superficial and neutral level, such as asking one another what courses they were taking, their cultural background, and what films they enjoy watching. Dyads in the free condition thus had a typical first-encounter conversation between strangers who were getting to know one another. As such, the conversation was epistemically oriented, drifting between topics about understanding one's hobbies and personal interests.

The comparison with free conversations shows that topical conversations, even ones that are primed for disalignment, have higher levels of alignment than free conversations that are neutral and that provide a blank slate for speakers to discuss whatever topics they wish. Free conversations can go either in the direction of alignment (such as when two speakers find that they have a great deal in common at a cocktail party), or they can go in the direction of neutrality, when speakers simply engage in epistemically oriented small talk. This study demonstrates that free conversations tend to go in the direction of neutrality, while topical conversations (even disaligned ones) go in the direction of alignment. The free condition was, thus, more conducive to dyads exploring their epistemic stances about different topics, while the topical condition was conducive to dyads exploring their affective stances about a single topic. These findings have implications for rapport formation such that having a topic to initiate first-encounter conversation may perhaps be more conducive to building rapport, as opposed to allowing speakers to have free reign to explore topics (Hoseini Shavoun et al., 2024).

Alignment as Social Performance

Interestingly, dyads in the topical condition did not report feeling higher levels of cohesion, despite having higher levels of alignment than dyads in the free condition. We had initially assumed that alignment would lead to increased feelings of social cohesion, given that alignment is foundational to developing feelings of connectedness in groups (Davis & Todd, 1985; Roccas & Schwartz, 1993). The lack of a strong difference in social cohesion between the free and topical conditions may be attributed to several factors, one of which is that alignment is a performative social behavior. The dyads were only engaged in a 12-minute conversation, which may not have provided sufficient time for them to develop a deep connection, even if there was a high degree of alignment. There also may be other determinants of social cohesion, such as the combined effect of alignment with other behavioral convergences. Moreover, alignment alone may not be sufficient to facilitate cohesion because having the same stance toward a topic, such as liking the same book, does not guarantee that speakers will feel affiliated with one another. Likewise, having different stances about a topic does not mean that speakers will dislike one another because some speakers may enjoy being challenged with a new perspective (Ellis et al., 2003; Fallahi & Haney, 2007; van Offenbeek, 2001).

Studies have shown that people try to tailor their behavior when meeting strangers for the first time in order to create a positive first impression (Jones & Pittman, 1982). Cialdini and Goldstein (2004) showed that individuals were more likely to conform to social norms and engage in prosocial behaviors when they believed it was expected or normative in a particular context. For example, speakers tend to use politeness strategies to maintain social harmony and avoid conflict during initial interactions with strangers. These strategies include offering compliments, expressing agreement, and showing interest in the other person's opinions (Brown & Levinson, 1987). Dyads in the topical condition, thus, may have been in alignment out of politeness and cordiality to avoid confrontation. However, this does not mean that dyads were being inauthentic when expressing their views. Instead, speakers can choose to find common ground and to express empathy and understanding regarding their different perspectives. For example, speakers may initially be disaligned about a topic, where one speaker may dislike a novel while another speaker enjoys the same novel. The speaker who dislikes the novel may have a negative stance toward it because they do not like the ending. The other speaker may agree that the ending was not executed well, despite having an overall favorable opinion about the novel. The speakers may then choose to focus on this aspect of the topic for the remainder of the conversation (e.g.,

“I understand your perspective. You bring up a good point that I had not considered, and I agree”), thereby leading to alignment instead of disalignment.

Limitations

Gender

The sample of this study was all female, which may have contributed to the prevalence of alignment because women are subject to different societal expectations and pressures regarding agreement (Karimov, 2021; Roberts & Norris, 2016). However, these gendered presumptions are not always the case, as alignment strategies that men and women use vary depending on context, topic, personality, and if they are in a mixed-gender or same-gender dyad (Sweet-Cushman et al., 2023). Furthermore, first-encounter conversations are opportunities to build connections, so both men and women may similarly want to establish a positive first impression, prompting them to err on the side of politeness and striving for alignment (Boothby et al., 2018). However, men can sometimes demonstrate competitive behavior (Grainger & Dunbar, 2009). As such, more research needs to be conducted in order to determine whether male dyads also have an affinity for alignment, especially if men are paired for opposing views on a topic.

Age and Culture

Another factor that may have biased our topical condition toward alignment is that we employed university students around 19 years old. Young students at a Western academic institution may be inclined to avoid confrontation, which may also account for our finding that dyads in the topical condition were aligned as a means of “performing” alignment. Students from a Western academic institution may even be curious to hear about an opposing opinion in order to better understand alternative perspectives (Johnson et al., 2017). We also did not collect information about the participants’ ethnicities and cultural backgrounds. Some participants may have been raised in a culture in which politeness and deference are prioritized (Stadler, 2013), which may affect how the participants approach first-encounter interactions and how much they may choose to align. Even within Western cultures, different politeness strategies are used: Positive politeness may be more prevalent in certain cultures than others (Johnson, 2006; Lorenzo-Dus, 2001; Paramasivam, 2007). However, given that the participants attended the same university, they may conform to similar cultural expectations during the study as a form of communication accommodation (Hoffman & Zhang, 2022; Sam & Berry, 2010; Sidler et al., 2022). This effect of mutual acculturation might mean that the participants’ approaches to conversation may have been more similar than different, thereby minimizing the effect of different cultural influences (Matsumoto, 2007; Ng et al., 2019).

In addition, the type of dyads investigated in this study represents only one type of relationship status, in which the speakers are female strangers who are peers and classmates and they, therefore, have relatively “equal” statuses. However, conversation dynamics can differ depending on the relationship status of the speakers. For instance, a parent and an estranged child engaged in a disaligned political conversation may have a higher degree of disalignment due to the tension in their relationship. Or the child may concede their stance to the parents if there is a degree of apprehension due to the unequal power dynamic, leading to alignment (Fuligni, 2012; Fuligni et al., 1999). Close friends may feel more comfortable expressing disalignment authentically as opposed to upholding prosocial expectations (Finkelstein et al., 2017; Graham et al., 2008). Thus, not all relationship statuses may have an affinity for alignment.

Protocol Design

We recommend that a follow-up study should increase the sample size to include a larger demographic of participants to account for the diversity across gender, age, and culture. For instance, the same protocol can be repeated for a group of male dyads and mixed dyads, and it can also be repeated for acquainted dyads. Increasing the sample can also help reduce the possibility of inflated effect sizes and Type 1 error. When sample sizes are less than 150, the effect size estimate is more variable and less reliable (Slavin & Smith,

2009). As such, an important limitation of the protocol design to acknowledge is that while the results identify the presence of main effects and pairwise differences, the effect sizes may need to be reevaluated with a larger sample.

Another stipulation of the protocol design is that participants knew that they were being recorded for the purposes of observing their social interaction, which may have influenced them to be more aligned in their responses than they might have been if they did not think they were being observed in this way. This may have contributed to the possibility of alignment being a social performance that was discussed above. However, it was necessary for the participants to have this knowledge of being recorded so that they could provide consent. Also, the interlocutor that a speaker is paired with is as much an audience as a third party who watches the recording of the interaction afterward (Crow, 1988; Horton & Gerrig, 2002; Yoon & Brown-Schmidt, 2019). Social performance, therefore, can occur even outside of a video-recorded setting.

Another limitation of the protocol design is that the research task was described to participants as being about “social interaction,” which may have influenced the extent to which they sought alignment, especially in the topical condition. While the intention of framing the study this way was to prevent biasing the participants in the topical condition from disaligning with each other, we could have perhaps described the task as about “opinion sharing” instead and that participants could choose to share either similar or dissimilar opinions as their conversational partner. By explicitly stating the options to share either similar or dissimilar opinions, participants may have felt more comfortable sharing dissimilar opinions. We still believe that “social interaction” is a neutral way of describing an interaction between two people, but participants choosing to align may reflect the underlying prosocial expectations that have become associated with the phrase (Fritz et al., 2023; Li et al., 2022). In the real world, many people have polarized views that lead to conflict in communication, which can be seen in online spaces or in public confrontations (Levy et al., 2022; Wells et al., 2017). Thus, the results of this study are encouraging because speakers are striving for alignment in order to build rapport, even if these results are only reflective of a specific type of dyad. This study provides some evidence about how speakers opt to align rather than disalign, so future work should continue to explore how alignment can be fostered, whether it be via how a discussion is framed or how people choose to express disalignment in a way that is not closed-ended.

A third limitation of the protocol design is that while we asked participants to state the level to which they agreed or disagreed with a topical statement, we did not ask them about the extent to which they were invested in or passionate about the topic. For example, a participant who states on a questionnaire that she strongly agrees that people have free will does not necessarily imply that she feels invested enough about the topic to defend her stance and to engage in an effortful discussion with someone who has a different opinion. As such, a lack of investment in a topic may make it easier for speakers to perform alignment and concede their original stance (Baron et al., 1996). The fact that the conversation was constrained by the topic theme may have also allowed the dyads to remain aligned for a longer duration, leading to a higher prevalence of alignment than dyads in the free condition because these dyads were able to find a subtopic within the main topic and then explore their opinions about it, as opposed to abandoning the topic and seeking a new one. A neutral condition where the speakers are given a topic about which they both have a neutral stance may provide a better comparison for the topical condition to see whether dyads align more when they initially have disaligned opinions or neutral opinions. However, the findings from the study are still noteworthy even without the inclusion of a neutral condition. The observation that speakers in the topical condition spent more than half of the conversation in alignment despite having disaligned opinions demonstrates that dyads are choosing to align for a majority of the time even in the most extreme arrangement when they have opposing views.

The similarity in self-reported social cohesion ratings between the free and topical conditions, despite the difference in degree of alignment, suggests that alignment may not be the sole determinant of social cohesion.

Rather, the free and topical conditions in this study suggest two routes to social cohesion. The social cohesion ratings from speakers in the topical condition were just as high as the social cohesion ratings from speakers in the free condition (4.4 out of 5). Although the dyads in free condition had lower levels of alignment, they engaged in a typical type of first-encounter conversation. Because of this, their social cohesion ratings may have been high because they achieved a greater epistemic understanding of each other by the end of the conversation. On the other hand, dyads in the topical condition had similar levels of social cohesion but higher levels of alignment, but they also started with disaligned opinions about the topic. Thus, perhaps the effortful process of reaching alignment from disalignment allowed the speakers to feel a high level of social cohesion (Boothby et al., 2018). The alignment and social cohesion that arise in topical conversation also provide support for the effectiveness of structured and guided icebreaker activities to build rapport during initial encounters (Hoseini Shavoun et al., 2024; Sprecher, 2021).

Conclusion

We carried out a study that attempted to quantify three dimensions of affective alignment in stance-taking and compare them between dyads engaged in either free-rein or topical conversations. Paradoxically, the results revealed that speakers who were paired based on disaligned opinions had significantly higher levels of alignment than dyads in the free condition. Dyads who were expected to disagree with one another ended up spending more time in alignment, aligned at a higher intensity, and used a larger percentage of open-ended, elaborative alignment acts than dyads who were not paired for disalignment. These results suggest that speakers have an affinity for alignment and strive to avoid unnecessary confrontation. Establishing a method for quantifying alignment has important implications for studying how speakers experience social cohesion in different conversational contexts.

Data Availability

The authors are willing to share their data, analytics methods, and study materials with other researchers. The material will be available upon request.

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