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Relationships are perhaps the single greatest source of human happiness, and as part of building strong relationships, conflict and hard conversations are unavoidable. As people increasingly rely on digital communication to initiate and resolve conflicts, we examine how design can improve the experience of working through hard conversations within close relationships. We interviewed six psychotherapists and twenty-one social media users to understand both theoretical best practices for navigating conflict and users' experiences with hard conversations online, particularly on text-based messaging platforms. We used our findings to create a temporal model of how digital design could intervene to support users and their relationships during these conversations. Specifically, we find that design can help to facilitate more mutually consensual difficult conversations, support emotional regulation during the conversation, and help facilitate pauses when necessary. We explore the tensions between balancing the needs of relationships and the individuals in them in digital design, and how to center relationships in digital design.

$\label{eq:CCS} Concepts: \bullet \textbf{Human-centered computing} \rightarrow \textbf{Empirical studies in HCI}; \textbf{Empirical studies in collaborative and social computing}.$

Additional Key Words and Phrases: conflict, computer-mediated communication, social media, design

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1 INTRODUCTION

Studies to understand what makes life meaningful consistently find that strong interpersonal relationships are "*the single greatest cause of human happiness*" and one of the best predictors of long-term well-being [5]. Cultivating strong relationships is as effective in increasing physical health as cutting back on smoking by 15 cigarettes a day [32], and the quality of a person's relationships is a better predictor of their lifetime happiness than their genetics, their IQ, or their socioeconomic status [55]. A qualitative analysis of end-of-life sentiments reveals that one of the primary regrets of those who are dying is not spending more time with people they love [80]. Quite simply, a fulfilling life is built on intentional interpersonal relationships.

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© 2024 Copyright held by the owner/author(s). 2573-0142/2024/11-ART379 https://doi.org/10.1145/3686918 A necessary, and often uncomfortable, part of building close, long-lasting relationships is learning how to navigate difficult conversations together. As Dr. John Gottman, professor and social psychologist, once said, "*If you enter into any long-term relationship thinking that the hallmark of its success is a lack of conflict, you're setting yourself up for disappointment and failure*" [23]. Gottman reframes conflict as an opportunity for connection in relationships, in which people who respond with emotional receptivity make their relationships stronger over time [21, 22]. Computer-mediated communication (CMC) has the potential to support users in the continuous relationship-building work of turning toward each other with emotional receptivity during difficult conversations, but too often, it undermines this process instead. In particular, many say that online conflict with friends and family is one of the biggest stressors of using social media [18], with many people avoiding engaging in difficult discussions online altogether [7]. However, many wish they could use social media to express themselves and disagree more freely [7].

Design can encourage certain patterns of communication, such as increased thoughtfulness [75], and active listening [39]. As people more and more frequently rely on online communication in both professional [59] and personal [2, 63] relationships, there is an opportunity to support users more effectively during these difficult conversations. In this work, we sought to understand: 1) best practices for navigating conflict with loved ones, 2) how social and communication platform users experience online conflicts currently, and 3) how digital affordances affect online conflict, particularly on text-based messaging platforms. To investigate these research questions, we conducted a qualitative study with six therapists with a background in attachment-based therapy and/or couples counseling, as well as twenty-one social media and digital communication platform users who had participated in an online argument, to discover opportunities for design support.

As a result, we propose a temporal model of how digital design can intervene to support people during difficult conversations online. We find that users desire designs that center a mutual consent process when communicating with each other, especially when bringing up a difficult topic. Emotional regulation during the course of a discussion was also stressed by both therapists and users. Users explained that one of the benefits of using computer-mediated communication to engage in difficult discussions was the ease of being able to walk away, pause, and engage in activities that helped them to regulate. However, when others took a pause without communicating during a difficult discussion, this often led to anxiety, sometimes to the point of severing relationships. Additionally, users contrasted online and face-to-face communication, saying that while online communication allowed them to pause and regulate, face-to-face communication was often better for understanding subtle nonverbal cues. However, there was not necessarily consensus on one medium being better than the other for these difficult conversations. We believe that since users rely on digital communication for these conversations, there is a design opportunity to facilitate more responsive and attuned communication online.

Ultimately, this work contributes an empirical understanding of how users perceive digital affordances at various stages of conflict and evidence of user desire for frictionful and traumainformed designs during online conflicts. We contribute a method for highlighting tensions between designing for *relationships* compared with designing for *individuals* by encouraging *perspective taking* during co-design and interviews. Through perspective taking, users discuss both how they want to *receive* versus *use* design features. We conclude with design recommendations for difficult conversations online, such as engaging self-reflection, centering consent, and incorporating nonverbal, contextual communication details that lead to greater attunement. We hope that our findings can empower future computer-mediated communication researchers to build on their understanding of how to design for relationships as well as individuals.

2 RELATED WORK

Here we outline the importance of close relationships, the unavoidability of difficult conversations within them, and how digital design has affected online communication in prior work.

2.1 The Importance of Relationships and The Role of Conflict

Relationships are one of the most important factors in long-term health outcomes, happiness, and satisfaction [5, 32, 55, 80]. People have a strong intrinsic drive to form social bonds with others [8], and social isolation causes intense distress [31]. Close, supportive relationships are one of the most important contributors to happiness and subjective well-being [65], and investing in relationships helps to protect people from the negative impacts of adverse life circumstances [10].

We draw from attachment theory literature in psychology, which states that a necessary part of forming close social bonds with others is navigating conflict [23], and navigating it well is an opportunity to bring relationships closer [21, 53]. In Gottman et al. [23], they consider conflict synonymous with to "*fight or discuss difficult and uncomfortable issues*." Communication scholars differentiate a disagreement, argument, and conflict [58, 82], stating that while differences of opinion (disagreements) can turn into arguments (verbal processing of the disagreement), they are only considered conflict once they become verbally aggressive. For our purposes, our work spans disagreements, arguments, conflicts, and discussion of difficult emotional topics, which is more aligned with Gottman's implied definition of conflict.

Gottman [20] states that effective problem-solving in marriages relies on the skills of a softened start-up, repair and de-escalation, and accepting influence. Softened start-up involves being concise, complaining without blaming, starting with positivity, making "I" statements, describing events without evaluating or judging, being clear, being polite, expressing appreciation, and being vulnerable. Repair focuses on stating how both parties feel, apologizing, taking a break if needed, expressing appreciation, and working towards agreement. Accepting influence and compromising are about yielding one's position to work towards common ground. Central to all of these skills is physiological soothing. Physiological soothing refers to the ability to soothe one's heightened emotional state to continue a conversation productively [20]. We expand on this prior work to investigate how these best practices for conflict may apply to relationships beyond married couples and in the context of digital communication platforms.

2.2 Research on Online Conflicts and Close Relationship Communication

There are several ways in which computer-mediated communication systematically differs from in-person conversations. Design affordances such as invisibility, perceived anonymity [76, 83], and lack of eye-contact [41] can reduce empathy online and lead to toxic disinhibition. Prior work has shown that some people are more likely than others to display incivility online [49], however, other work has shown that anyone can be influenced to display incivility [12]. Overall, people tend to find less common ground with others when arguing online compared to in-person [44].

Much of the research that investigates conflict focuses on conflict on social media, in a public setting. Group norms highly influence how people participate in public-facing social media [64], influencing people to become more aggressive if that is the established norm. Public conflicts also pose additional hazards to users, including face threat [45], risk of being unfriended by those involved and observing the conflict [36, 40, 71, 79], and difficulties in managing self-presentation [6, 51]. People naturally contrast their experiences on public-facing social media compared to more private channels, with many users preferring to bring something up in private, or move to a private channel once the conflict has begun [7]. Moreover, Hoefer et al. [30] demonstrated that private online interactions such as messaging, phone calls, and video calls are comparable to in-person

interactions for conferring social support, whereas public online interactions such as those on social media are associated with more negative outcomes such as loneliness. We focus specifically on private, text-based messaging platforms because prior work has shown people are most comfortable having hard conversations through those channels [7].

We found that there is a surprisingly small portion of research that investigates online conflict in the context of private messaging platforms. Scissors and Gergle [66] reported that couples naturally integrate face-to-face and computer-mediated communication into their conflicts, with many saying it was easier to initiate a conflict online and then resolve it offline, similar to Baughan et al. [7]. Scissors et al. [67] demonstrated that communicating via text messaging during conflict (compared to face-to-face) was associated with lower self-esteem and increased distancing behaviors [29]. If tikhar et al. [34] demonstrated how users' interactions with systems often reflect users' preexisting values when evaluating various typing indicators on a messaging platform.

Thus, while there exist models of conflict from psychology literature, and prior work has investigated conflict on social media platforms, there is relatively little research on people's most common use case for CMC in conflict in close relationships: private messaging platforms. Prior research also shows that people who rely on messaging during conflict may need the most support, as they are more likely to have lower self-esteem and display relationship-eroding behaviors [29, 67]. This highlights an opportunity for research and design to support people during computer-mediated conflict in their close interpersonal relationships.

2.3 Novel Designs' Influence on Conflict and Interpersonal Relationships

There are many examples in which research has shown that subtle variations in design can impact how people communicate with one another. Research has demonstrated how design has the power to influence people to be more thoughtful during online communication [75] and show active listening skills [39]. People are also eager for online interventions to replicate things that they already do offline [7], such as moving public disagreements to private online spaces. Additionally, people naturally incorporate computer-mediated communication into their conflicts as needed [66]. Even in professional contexts such as online therapy, interface design affects the quality of clinical relationships [78].

However, computer-mediated communication also comes along with its own set of potential pitfalls, as the lack of synchrony creates uncertainty around when a message will receive a response, and delays lead to user frustration [33]. As such, many different interventions have explored how to create feelings of closeness during online communication. One example is PocketBot [85], which introduced a "knock on the door" feature to help long distance couples initiate and come back to conflict. This feature helped by introducing the topic to both parties and asking them if they were open to discussing it, and then led them through prompts to help facilitate the discussion. Another study by Costa et al. [15] demonstrated that giving people voice feedback with a more calm tone helped them to feel less anxious during conflict. While there are many studies that investigate how to foster closeness online [37, 38, 42, 48, 70, 73, 84], there is a lack of investigation into designs to support close personal relationships as they navigate conflict.

Overall, interpersonal relationships have a profound influence on human experience [5] and are shaped in predictable ways by the technologies people use. Yet, there is limited theoretically grounded work blending relationship science with design practice, and prior scholarship calls for new design approaches that leverage the rich, existing scientific literature on interpersonal relationships [28, 77]. This work is a step towards understanding how to prioritize people's relationships by designing novel interventions to support them during online conflict.

3 METHOD

Our investigation of design opportunities for online conflict in close relationships comprised of interviews with two different populations: therapists and computer-mediated communication users who had experienced an online conflict in the past year. We chose these two populations to ascertain both best practices for conflict and how conflict often occurs online.

3.1 Therapist Interviews

We chose to interview therapists because clinical research and clinical practice often are estranged from each other within the field of psychology [74], and we sought to examine expert opinions that would be most familiar to those seeking psychological support.

3.1.1 Participants. We recruited six therapists from an online community for mental health practitioners who are interested in technology. All the individuals we recruited had extensive prior education in psychology and have or had a clinical practice. Specifically, they had relational, attachment-based clinical training and/or had a history of helping couples navigate conflict together. We recruited two men and four women, who had an average of seven years in practice (*sd* = 3). We conducted five of these interviews via Zoom for 30 minutes, and offered \$50 in Amazon or Tango gift cards. One of these interviews was conducted via Zoom for 45 minutes, and we offered \$75 in Amazon gift cards. We refer to these participants as P1t-P6t.

3.1.2 Procedure. We conducted semi-structured interviews in which we asked therapists about how best to approach conflict, including how to initiate and respond, where things go wrong, and which strategies can help. We also talked about what is important in the resolution and aftermath of conflict. We specifically probed for how this could vary depending on whether the conflict was online or offline. We then showed therapists a low-fidelity sketch in which the platform would intervene and ask if the person sending a message was feeling vulnerable and would like to share that with their partner. Therapists visually reviewed the sketch and gave their feedback in the interviews. The sketch was generated by the research team to explore the idea of supplementing verbal communication with non-verbal communication. This script and low-fidelity sketch are included in the supplemental materials.

3.1.3 Analysis. After each interview finished, one researcher took notes and compiled memos. Once all interviews were completed, they were transcribed in their entirety, and three researchers reviewed the transcripts and open-coded for emergent themes. The initial set of themes included two over-arching themes of "cultivating emotional awareness" and "lowering risk of rejection/rupture" with 5 sub-themes each. The initial subthemes included self-regulation/self-awareness, co-regulation (reading nonverbal communication), taking breaks, staying on task, and active listening for "cultivating emotional awareness." Conversational consent, Needs-first language, Building Trust, Afraid to Communicate, and Repair were listed under "lowering risk of rejection/rupture." The remainder of the analysis was completed with the user data and is described below.

3.2 User Interviews

To contextualize what we learned from the rapist interviews, we explored how users felt about their online arguments and how design could support them.

3.2.1 Participants. Towards this goal, we recruited 21 adults who use social media regularly and had participated in an online argument in the past year. We recruited ten men, eight women, and three non-binary people. The average age of our participants was 25.6, (sd = 3.8). We conducted

interviews for roughly 45 minutes both on Zoom and in person, and compensated participants with \$25 Amazon or Tango gift cards. We refer to these participants as P7u-P27u.

3.2.2 Procedure. We conducted semi-structured interviews in which we asked participants about the details of a difficult conversation they had online, across messaging apps (n = 18), emails (n = 1), direct messages on social media (n = 1), and video chat (n = 2). These conversations primarily took place with friends (n = 12) or romantic partners (n = 6), with one each taking place with a coworker, acquaintance, and family member. The conflicts ranged from breakups, talking over miscommunications, political disagreements, and other emotionally fraught personal topics. We asked participants about how the conflicts began and resolved.

In particular, we asked about how they chose how to respond to various messages, and how design could help support them in the process of arguing. When design features or affordances were brought up by participants, we asked in more detail about how the affordance impacted the conflict, if anything would make it better, and if they felt differently about sending or receiving messages with the affordance. At the end, if time allowed, we asked participants if they had any novel design ideas for how a platform could intervene and help them during their conflicts, and we asked them to sketch these ideas.

3.2.3 Analysis. Upon interview completion, three researchers reviewed the anonymized transcripts with an inductive coding process. One researcher reviewed all transcripts, and the other four each reviewed a portion of the transcripts so that at least two researchers reviewed every transcript. Due to an error, the transcript from P12u was lost, so we solely relied on the notes taken during their session instead. The researchers open-coded for emergent themes during their review, then discussed and compared themes. There were 22 initial themes, including *Conflict as self-growth*, *Consent to Enter Conflict, Leading with Needs, Flooding and Pausing, Responsiveness, Specificity, Modes of self-expression, Seeking Out the Unspoken Tone, Balancing Needs, Cultivating Mindfulness, Communicating boundaries, Passive Indicators of responsiveness, Consistent and Predictable Follow-Through*, and *Reflection*. Additionally, we collected 11 design sketches from participants, and these ranged from sketches to help communicate a boundary, understand tone, facilitate mutual consent, and help rephrase harsh communication.

Researchers then met, discussed and compared the 34 themes and sketches and decided on a set of themes to investigate further. In our analysis, we found many parallels between therapists' guidance for managing conflict and users' reflections on their online conflicts. Therefore, the research team looked to collapse similar themes across participant groups, such as *needs-first language* and *leading with needs*. Over time, the research group decided to focus on a temporal model of entering, executing, and resolving conflict. Once an initial temporal model was created, one researcher then reviewed all of the transcripts anew another time, sorting quotes into the temporal categories of entering, executing, and resolving conflict. The temporal model was iterated on to determine the final nine themes. The design sketches were then sorted in alignment with this temporal model to add context to users' experiences and desires at various points in their conflicts online. The three researchers then compared the categorized quotes asynchronously, making updates and communicating with the research team as needed.

4 RESULTS

Here, we present our temporal model of opportunities for digital designs to support relationships during online conflict, shown in Fig. 1 and summarized in Table 1.



Fig. 1. The key points in which design could intervene to support users during hard conversations online, based on data from interviews with therapists and digital communication platform users.

4.1 Initiation: How to Open A Difficult Conversation

In interviews, we first asked psychotherapists how to initiate a difficult conversation with someone. We also asked social media users how their argument was initiated, and their feelings leading up to and in the initial stages of the conversation. We found that therapists supported the idea of internally exploring one's needs and the deeper context to the conflict, and then communicating by asking for permission and leading with needs.

4.1.1 **Explore Underlying Needs and Context**. Therapists explained that it can be helpful to view conflict as an "*invitation*" (P4t). P5t encouraged their clients to practice "*getting curious*," about conflicts. In particular, they emphasized how it is important to explore the underlying needs and context for a conflict. P6t talked about how "*self-reflection is so important because usually, it's not just about the [surface level] behavior [that caused the conflict]. It's triggering some sort of belief system in the client that also needs to be externalized and communicated." This therapist encouraged this self-reflection and bringing the full context to the conversation because "when the other person is communicating a belief system, like the context in which they were brought up, why this [behavior] might be scary and feel unsafe for them, it is so much easier to be receptive, and open, and empathetic." Users had similar thoughts about how to initiate hard conversations. For example, P22u said, "I need to communicate my needs, but also preserve our friendship without hurting her feelings," demonstrating having carefully thought through how to approach the conversation.*

Many times, participants also made an intentional choice to engage via text-based messaging, saying "If you were to talk in person, you are going to say something that's off the top of your mind. Versus in text, you take the time to read it out and really understand what you're about to say and then send it out, which makes it a little bit easier because a hundred percent, if we were to just blurt it out every first thought, I think we wouldn't really get anywhere" (P27u). This suggests that some users value the time afforded to them by engaging in difficult conversations digitally. Intrapersonal interventions to support users before initiating conflict could help them to reflect, explore their underlying needs and goals, and remind them of important contextual details for the conversation. However, users had doubts that such an intervention could be effective. For instance, P7u said "It

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Theme	Participant reflections and design ideas
Explore underlying needs and context	Initiating conflict over tech-mediated channels allowed users to be more intentional with their language and pace the conversation more slowly.
Consent to enter conflict	Participants said that asks to enter conflict needed to expire if left unanswered because of how con- text could change for both parties. They also imag- ined ways technology could facilitate consent to enter conflict or channel switch.
Lead with needs	Participants suggested tooling to highlight "you" statements and rephrase as "I" statements
Emotional regulation (avoid flooding)	Participants chose CMC because it allowed them to do regulating activities during arguments. They may benefit from sociotechnical interventions that suggest physiological self-soothing activities.
Communicate when a break is needed	Read receipts implicitly signaled a pause if a mes- sage was not yet read. However, participants often wanted to read messages without sending read receipts and developed workarounds to do so.
Attuned communication	Participants wanted more ways to get the emo- tional context of messages. However, they also liked that text messaging empowered them to be more straighforward than other channels.
Process emotions before repair	Participants discussed how they could hide their emotions more easily over CMC, which suggests designs to help people process their emotions may be beneficial.
Apologies and setting new common ground	Many participants wished there had been an in- person resolution, as they said that resolutions mediated via text didn't resolve the conflict as deeply as they wished for.
Welcome conflict as a chance for personal growth	Participants valued their self-advocacy during conflict, even when it was hard.

Table 1. Participants' reflections demonstrated both why they chose to have conflict online as well as where they wanted more design support.

would have to have a lot of tact of, 'We see that this is happening and we are offering this to help you process." However, they said, "it's going to feel bad."

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4.1.2 **Consent to Enter Conflict**. Therapists described hard conversations as most successful when they occur in a protective bubble that both parties have consensually agreed to enter together. As P1t explained, "I think there's utility to asking permission first, to saying something like, 'I have something difficult I want to talk about; are you ok with sitting down and talking about that?' or whatever, and getting that buy-in, that consent." Similarly, other therapists recommended "asking the listener for permission to talk about the topic" (P2t), giving a "pre-warning" (P3t), to "choose a good time" (P3t), and work to "enter that space together" (P4t).

Therapists saw potential for technology to scaffold people's ability to build a consensual bubble for hard conversations and invite each other into it. P2t suggested that an initial message to open an emotionally vulnerable conversation "*should expire*," because the moment might pass for both of them if one of them is not available. The temporal specificity of consent is reflected in a commonly used acronym for consent, FRIES, which states that consent is freely given, *reversible*, informed, enthusiastic, and *specific* [3, 4]. P5t reinforced this when looking at the sketch in which the platform facilitated sharing vulnerability, saying, "*Each person is also in their own environment*. *They're probably not exclusively attending to only this. You might be competing with other stimuli that are calling their attention*." P4t explained this in further detail, saying, "I could imagine myself again in a *situation where I'm using that interface, I'm about to go into a meeting in two minutes, and then I get this, like 'I'm feeling vulnerable.' I want to be able to say like, 'I see that, and that's really important, and I can't hold your vulnerability right now because of 'this', can we loop back to this at this point' or something like that.*"

One participant discussed how reaching out via text felt "safer" but, they said that they "would've been down for a call... in the middle of the argument" if they had been nudged by the platform (P14u). They specifically said, "And it has to not just nudge me, it has to nudge both of us, because then the onus is on the platform." Elaborating, P14u said, "I don't want to be the person who's suggesting it. I don't want them to think that, wait, why is she being weird and suggesting a video call? Can she not just text right now?" This demonstrates how technology-mediated interventions can lower the barrier to having difficult discussions, as initiating and rejecting various forms of connection becomes less personal. Our participants discussed times when asking for consent to enter conflict would have helped their relationships, saying "I was aware that he might have had other stressors going on, and retrospectively I was like, oh, well, I guess I was bringing on another stressor onto his plate... I don't think I was thinking through all those aspects as much as I should have" (P24u). This demonstrates that design interventions that rely on a process of mutual consent would be beneficial for difficult conversations.

4.1.3 **Lead with Needs.** The most common strategy therapists suggested for reframing disagreements as invitations was to lead with needs rather than accusations. P2t described how the second most important aspect to initiating conflict, after asking for consent to discuss something difficult, is "sharing with the audience that 'this is how I'm feeling right now,' whatever that feeling may be." This was echoed by all the other therapists, who also said that they work with clients to practice emphasizing what they need rather than the perceived shortcomings of the other person. P4t explained that she works with patients on questions like, "How do we frame our initiation of the dialogue to be about what we're needing? How do we make it clear? How do we ensure it's non-confrontational or accusatory or immediately putting someone on their heels?" (P4t)

We found that using a "needs first" approach was challenging to some of our participants. For example, they anticipated that the way they communicated might have "came across as harsh or something" (P14u). P18u said that they "find it a lot easier to be harsh, straightforward [in text]...I use a lot more you-statements, more accusatory [language]." However, others said that using asynchronous communication allowed them to edit out all that they "wrote to specifically try to hurt [the other

person]" (P9u). The time afforded to them by using messaging allowed them to keep a focus on supporting the relationship. Some participants described a desire for "*something like Grammarly*" to suggest replacements for "*strong words*" with "*softer words*" or a "*milder tone*" (P14u). They envisioned a way technology could intervene, potentially by reframing certain sentences with a "*non-violent communication method*" (P9u). They described an "*AI*" intervention that would highlight accusatory language, so users can "*hover over it with your little mouse and a little dialogue box pops up*" to help people "*consider rephrasing*" (P9u).

4.2 Navigation: Emotional Regulation and Attuned Communication

Therapists primarily stressed the need for people in conflict to 1) identify and regulate their own emotional responses, 2) communicate when a break was needed in order to regulate, and 3) be responsive and specific in their communication with one another during conflict.

4.2.1 **Emotional Regulation and Avoiding Flooding**. Therapists explained that people cannot have productive disagreements when they are *emotionally flooded*, that is, emotionally overwhelmed to a point that induces a physiological response [24]. As P5t explained, "*if your heart rate's over a hundred beats per minute, you're not going to effectively engage… That has to be managed first*." P3t also emphasized that "*when a couple is kind of having an argument or a conflict and… one of them becomes physiologically flooded…they shut down*." Thus, therapists explained that when they work with patients, "*cultivating awareness would be the first thing I would do*" (P2t) to facilitate healthy conflict, and "*supporting the individual in self-regulating*" was critical "*to initiate a difficult conversation*" (P4t). Towards that goal, all therapists discussed the importance of "*paying attention to my physical responses*" (P2t), such as "*their heart is beating faster or their hands are tingling*" (P3t). They recommended creating "*space between feeling the emotion and responding*" by trying to "*pause, assess the quality of my thoughts I'm having, the reaction I'm having to my thoughts, if it's possible to just take 10 seconds, five seconds, to pause before responding,*" (P2t). By taking a step back before continuing the discussion, people empower themselves to engage in a way that aligns with their values and broader goals for the conversation.

Participants also talked about the importance of taking a pause during their online conflicts. "This is why I like texting. I needed it to be slower, with more thinking and more weight on the words that are there forever" (P7u). Others said that when conflicts popped up, "taking a bit of time to cool off was good" when "it was a pretty emotionally charged conversation" (P8u). P9u similarly said that using e-mail allowed them to "come from a calmer, more stable [place]." Another said it was "really easy to… pause and come back to the confrontation later," saying it was one of the "advantages" of using text messaging (P15u). Similarly, P18u thoughtfully prepared for difficult conversations by engaging their emotional regulation coping strategies, saying "I have strategies written down. I like TIPP, [which is] a DBT skill where you change your temperature or do exhaustive intensive exercise, or you do paced breathing or use progressive muscle relaxation." This participant was referring to the dialectical behavioral therapy (DBT) skill of temperature, intense exercise, paced breathing, and progressive muscle relaxation (TIPP) [43]. They said this was one of the advantages of using text-based communication, saying "if it's a video call, then you can't necessarily do extra things to self-regulate, and if it's text, it's better, but then you miss out on so much of [sic] cues."

Participants imagined ways that platforms might help with emotional regulation and avoiding flooding as well. For example, P8u suggested, that their screen could show a message saying, "*Tve noticed it's heated, blah, blah, blah, blah, blah. Have you thought about asking these questions?*" *That would be a cool popup to have.*" However, they acknowledged that "*This would be cool and invasive*," highlighting the delicate context of interpersonal conflict and sociotechnical interventions.

4.2.2 **Communicating a Need for a Pause**. When evaluating how design could impact the flow of an argument, therapists discussed the importance of communicating a need for a pause, saying, *"If I don't articulate to my partner or to my friends, 'I need to take a break. I will come back in 15 minutes.' What that looks like, is me just leaving. Which of course puts the other person and an even worse spot than perhaps they were before" (P4t). Participants said when they leave a conversation during an online discussion without communicating, it often led to anxiety and bad outcomes, though not always. Factors of particular importance were read receipts, time elapsed between messages, and activity status (e.g., online indicators).*

P10u talked about how they preferred for conversations to take place in real-time, "unless they're like, 'I need to think about this,'" highlighting the importance of communicating the need for a pause. They continued by saying how read receipts created more anxiety for them, "I wish you could turn them [read receipts] off for other people sometimes...I wish they could turn read receipts on and decide that they're fine with anyone knowing when they've seen it or not, and I can decide if I want to see it or not." Another said that they "keep them [read receipts] off because I know that it sucks when I see that people have left me 'on read" (P17u).

Users even went so far as to work around the read receipt feature, saying "I have a certain widget where I can read the message before opening the message. So I can sometimes read the message and think about what I can reply and then reply in some time" (P20u). Similarly, P18u said "you can long press to see the content of it before you commit to being displayed as having read the conversation...I pay attention to [read receipts]...I want to know how long ago you read my message and had the opportunity to respond and yet did not." Similarly, P19u said "If you respond in four hours, that means you're not interested, or you don't care enough to respond instantly." Another participant thought, "It's maybe a little bit more nuanced than that. [While being left 'on read' was] sometimes frustrating, I wouldn't say it's entirely unhelpful. It's also kind of satisfying to know that the person has seen it and, therefore, presumably is thinking about what you said. Actually, it is, I think, also kind of gratifying for the sake of argumentation when someone takes some time" (P15u).

Beyond read receipts and time elapsed, another participant said activity status could be misleading, "If I was really having conflict via Instagram chat, I could also be just getting messages from other people I talk to on there, which I wouldn't like. It's like, 'Look, I'm active.' But no, I'm active in a fight, so that would be hard, someone sending me a meme or something while I'm in the middle of a deep breakup" (P7u). This participant suggested a pausing intervention, which they called a "kinder block" (P7u). They said "it's not replacing the block... the 'I don't even know you' block," but it could communicate that someone "has paused communication right now from you" (P7u). This demonstrates the importance of relational context for these digital affordances. Similarly, P23u said they can "see when he [their partner] is active, but I think it's not really clear when he's actually active or when he's like, I don't know, picked up his phone." They continued that, "Because it's long distance, I think it's nice to know when he's engaging or when he's free or not. So I think that's also part of good expectation setting for me."

While participants valued being able to pause during text based communication, they were also aware that there were social faux pas to avoid, such as leaving someone "on read," (indicating someone had read a message and failed to respond), and they had consequences for the conflict and the relationship. In an ideal scenario, if someone needed to take time to think, people wanted that to be expressly communicated. However, many participants presumed that not opening the message afforded them the ability to take additional time to respond without harming the relationship, despite the anxiety they said being on the receiving end of such behavior could cause.

4.2.3 **Attuned Communication**. Therapists cited miscommunication and under-communication as barriers to having challenging conversations successfully. They emphasized how communication

during conflict needs to be *attuned* to the emotions and needs of the other person. Attunement may be defined as the "*reciprocal process of mutual influence and co-regulation*" between two people [14, 72], and it is highly contextual to the unique needs of each person and relationship. Attuned communication is both *responsive* and *specific*. For example, P3t explained that she recommends "*checking in with [the other person] to make sure that you're understanding what they're saying properly and even mirroring what they're saying. So using reflective listening to make sure that the person feels heard and also...[that] you're connected in understanding what you're actually talking about.*" Therapists cited the importance of both parties showing this attunement. P1t explained that having hard conversations well requires both "*clearly being heard and known*" and "*clearly witnessing or hearing or processing whatever has been said to you.*" Therapists emphasized that responses needed "*not to be just a generic, like, thanks so much for sharing... each response would sort of need to be unique and kind of specific to that situation*" (P3t). Participants described many ways that they navigated digital platforms in order to attune more deeply with each other, through channel switching to richer platforms, seeking tone of conversation, and being as specific as possible.

Many participants acknowledged their desire for attuned communication online, saying that it was important for their online conflicts to feel less like a debate, and instead "get at the acknowledgment-benefit-of emotional concerns that was getting important" in their conversations (P16u). They said this was difficult with text-based platforms, as "with text, it's really, really difficult to get tone out of a thing" (P8u). One of the options users thought did not work particularly well was emojis. They thought that, while they liked using emojis in other conversations, they "don't feel serious enough" and are "inappropriate to use for an emotionally charged conversation" (P8u). Other participants said that they "wish that I would've been able to express my tone better" during online conflict (P17u). P11u wished that "the app can capture my facial expression as I type," as that could help communicate tone. Another participant wanted "some more signaling around when she's earnest and when she's joking" (P10u) during online conflict. Across the board, participants felt that there was an "unfilled gap" (P8u) for expressing tone during text-based conversations.

Participants generally agreed that richer forms of communication, such as audio calls, video calls, voice messages, and face-to-face conversation, offered useful real-time cues not available in text-based conversations. But they consistently surfaced a tension between the value of these cues and the drawback of losing the reflection time that text afforded. For example, P9u felt a *"face-to-face argument"* would be *"better for personal resolution"* but explained that *"I don't think I would've come out of that feeling as empowered as I do now [after a text-based argument]*, because I wouldn't have been able to make my points" (P9u). P11u similarly said that *"it was better for me to use text message [because] I might not have been able to say what needs to be said.*"

Many participants also praised the affordances of online communication and how it could help them stay specific during arguments, which therapists highlighted as an essential part of attuned communication. They said being able to "click on the specific message and hit reply to that" allowed them to keep the message from "getting lost" (P10u). They also said that being able to "create threads" allowed them to "not get distracted" and not "get mixed up" (P13u). However, participants also said that they wished they were able to be more flexible with the specificity of their messages, saying, "one of the limitations of that feature [message-specific replies] is that you can only respond to an entire message" (P15u). "If there's 13 paragraphs all in a single message, you wish you could bring out just one particular paragraph and respond to that" (P15u), and similarly, "if you stream of consciousness write half a sentence at a time...maybe that makes it harder because the specific point that you are going to respond to is split across two messages" (P15u). They said, "It just helps with the organization a little bit more" (P15u). P26u wished there were "a way of highlighting those important pieces of information that I want to impart or reply to."

4.3 Resolution: Setting a New Context for the Relationship

Finally, therapists and users discussed strategies for conflict resolution, including the need to fully process emotions before attempting to repair the rupture the conversation caused, apologizing when needed, and finding new common ground. Therapists in particular also recommended welcoming conflict as a chance for personal growth.

4.3.1 Processing Emotions Before Repair. Therapists emphasized that emotional processing must occur before people can come to the table to resolve their disagreement and repair any ruptures in the relationship. P6t highlighted how "The moment after a fight with your partner is not the moment to evaluate whether or not you want a divorce." Instead, people should focus on processing their emotions before making any big decisions. They described how they helped their clients reframe some of their emotions, for instance when someone feels angry, "It's usually a sign that something you value is at risk, and flipping that question on 'What is it that you value that's at risk?"" (P6t) is more helpful than focusing on the cause of the anger. They also acknowledged that sometimes people initiate repair because "it's almost like they know that this is a good thing to do, 'I must do it,' and so then they're still in a place of anger, and then they attempt a repair. The other person is still in a place of anger, they reject the repair, and then this happens all over again" (P6t). To avoid this cycle, P6t recommended initiating repair "from a place of authenticity" after processing anger. They contrasted how design places "a lot of emphasis" on "ease of use," but "it's almost too easy" to communicate in the heat of the moment. P6t said that, "In therapy, you are getting them to slow down to think about what's going on. Ease isn't really the thing that you're going for. Speed isn't really the thing that you're going for. It's almost like, more self-reflection."

Participants discussed how they needed time after a hard conversation to process. For example, P22u said, "I think when everyone's mad, people don't want to talk right immediately, and so we need cool-off time." P8u said decided that "taking a bit of time to cool off" would be beneficial. However, they realized, "I don't think I'm getting enough out of this friendship to make this worth it. This is upsetting and annoying, but this might be a good time to exit." Many of our participants highlighted how they wished they had opened up more, saying, being "more honest about my emotions would've helped," however, they were concerned their friend "wouldn't have cared either way" (P21u). P21u liked that digital communication allowed them more control over how much they shared emotionally, because "the way that I text is going to be very different from how I feel, and so I can control my emotions a lot more and be more levelheaded while I'm texting" (P21u). P27u said they were "scared" to open up emotionally during their discussion because they thought their friend was "just going to tell me that I'm being stupid over and over again." The lack of evidence that participants were processing emotions in preparation to repair their relationships may indicate that designs intended to support emotional processing could be beneficial.

4.3.2 **Apologies and Setting New Common Ground**. Therapists explained that attunement is particularly important in the context of apologies. P2t explained that to apologize effectively "there needs to be an acknowledgment of the transgression... and being as specific as possible to help the other person feel heard, seen, understood, and let them know that you understand how your actions impacted them" (P2t). As P6t said, "the repair is mandatory." Participants also said that it felt harder to understand how responsive other people were being, for instance, P8u said that "the lack of context" made it difficult to understand how serious the conflict was for the other person in the aftermath. Similarly, P10u said "the fact that it was just a single text... was really relieving because it felt like it wasn't a big deal to her. But also not being able to hang out since then or talk about it more made me feel stressed because I was like, it seems like we're good, but I am always afraid that people are mad. But I didn't want to make her reassure me and be like, 'Are you mad at me?' So I just

didn't ask." P21u similarly felt that the lack of cues when resolving a conflict via text led them to "hide how I'm feeling and just be more levelheaded," even though "I would want to feel, yeah, that receptiveness back, and if it seems like the other person really cares, and I'll be open and honest about how I feel too. But I feel like then there's no point in doing that [in this situation]." P11u said that it would be helpful "If the other person got to know how [long] it took for me to type this message... then maybe he would understand better that it was not lightly written." They imagined something under a message to show "how many seconds or minutes it took, under the bubble" or "different level bars" under messages. Some participants preferred to have any repair conversations in person, saying "I get frustrated because I think I'm a better communicator in person. And I think she prefers arguing online because it's less emotionally vulnerable or something" (P22u). P22u continued to say "I wish that I would get the same effort in the, "I'm sorry for this piece, but I'm going to do this in the future." I feel like some of my friends, they just stop at the, 'I'm sorry for this' part. But I'd like to get the reassurance that you know what you're going to work on."

4.3.3 Looking to the Future: Welcoming Conflict as a Chance for Personal Growth. Finally, all the therapists we interviewed emphasized the importance of conflict to relationships. "Conflict is supposed to make individuals close to each other, so long as they want to maintain a relationship," P2t explained. P5t asserted that, "if you didn't actually have conflict, the concern is somebody is not being honest." They explained that "it's quite hard to give challenging or critical feedback, and so I think when you get it... frame that as a gift in your journey of self-growth, even if it comes in malicious wrapping paper" (P1t). They encouraged their clients to frame the uncomfortable step of engaging in difficult topics as an invitation to live up to their values, as they are "important for the health of *our relationship[s]*" (P2t). They described reminding their clients of their values, such as honesty (P3t), growth (P1t), interpersonal closeness (P2t), or self-awareness (P3t), and that these values are reasons to invite disagreement. Thus, therapists explained that engaging in conflict-whether as initiator or respondent—is most successful when the participants see it as a productive endeavor that enables them to live up to the values they share. Participants who engaged in online conflict also echoed this sentiment, describing how conflict taught them to "advocate for myself better" (P9u), "better understand your own viewpoints" (P15u), and "learn" (P8u). P7u described how they were able to demonstrate their values during conflict, saying, "I feel I got to practice being respectful to someone who really f-cked me over." They further emphasized that, "This comes back to, 'how do I want to be perceived and how do I want to hold true to myself?" (P7u). Similarly, P8u said, "There's always things to learn for yourself" from conflict.

5 DISCUSSION

Overall, our results show that our participants had desires for messaging platforms to support them in ways they currently do not. Intrapersonally, participants felt that using computer-mediated communication allowed them to explore their underlying needs and be more thoughtful in their communication than a face-to-face conversation. They also felt it was easier to pause and step away from the conversation on text-based platforms than in-person, allowing them to emotionally regulate. However, this was a double-edged sword, as someone leaving the conversation without communicating that they had to go would often provoke anxiety for the other person. In conflict resolution, participants overall did not display instances of processing emotions before repair, and instead, we heard stories of severed relationships. While sometimes relationship de-escalation and endings are appropriate, this may be an opportunity for design to intervene to help preserve important relationships.

Interpersonally, our participants tended to carefully consider how the other person would respond to initiation of conflict. Some wished that the platform they used could intervene to facilitate that

consent conversation, especially around switching channels from text to phone or video call. When discussing leading with needs, participants often said that it was easier to be more "*harsh*" and "*accusatory*" over text, evidence of online disinhibition [76]. They envisioned how technology may intervene to suggest "*non-violent communication*" in these moments. Participants also felt that there was a lack of support for attuned communication, and understanding tone of text was particularly difficult. Finally, most of our participants felt unresolved about their online conflicts. Many relationships had ended, and some said that they specifically wanted to hide how they felt. They *wished* there had been more sincere resolutions with apologies and accountability. However, they also felt justified in their actions during the conflict.

5.1 Design Recommendations for Hard Conversations in Close Relationships

While our participants discussed many seemingly disparate design features and affordances, there were similar themes regarding how they impacted online conflict. Here, we discuss ideas and examples for designing for the delicate interpersonal context of hard conversations online.

5.1.1 **Designing for Reflection, Friction, and Slowing Down**. Across all stages of conflict and communication, therapists emphasized the importance of going slow, being intentional, and self-reflecting. They explained how a slower pacing allowed for people to emotionally process and regulate, which in turn allowed them to be intentional in their communication with one another. In particular, they contrasted how current design practices emphasize ease of use, saying it sometimes made communication "too easy," which could be problematic.

Towards this goal of self-reflection, users could benefit from digital designs that help them explore the layers of emotional distress they experience before, during, and after conflict. For example, journal-style self-reflection prompts could help people to identify which emotions the current conflict has created for them, and then prompt the user to draw connections to other times they have felt similarly. As therapists suggested, this could lead to deeper understanding of the context for the conflict. These could take the form of the Tarot Cards of Tech [25] or Gottman Card Decks App [1].

During conflict, therapists stressed that going slowly and pausing where needed was important because it allowed people to remain emotionally regulated and manage flooding. Design has an opportunity to help facilitate these pauses and emotional regulation. For example, certain design affordances could become foregrounded or obscured in response to a pause, such as needing to take extra steps to post publicly, or a forced pause between messages for a period of time. In the latter case, an intervention to slow down message pace in conversations has led people to both feel frustrated and as though they participated more thoughtfully [52]. However, our participants had doubts about how beneficial such an intervention could be if they were highly emotionally escalated.

5.1.2 **Designing to Support Mutual Consent**. Across various points in time in a conflict and across many different design features, users and therapists pointed to the importance of consent. This was relevant both to interpersonal communication around initiating and resuming a difficult conversation and how information was shared on digital platforms. Prior work has explored how to help facilitate mutual consent when initiating conflict through a "knock on the door" feature, in which a chatbot (Pocketbot [85]) mediated the initiation of the conflict, which users felt made conflict more approachable. Per therapists' feedback, an intervention of this type may also benefit from a timeout feature, as consent may expire after a certain amount of time as people attend to what else is going on in their environment.

We similarly build on the other aspects of consentful design using the FRIES acronym: freely given, reversible, informed, enthusiastic, and specific [3, 4, 86]. One idea suggested by our participants was

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Fig. 2. Participants wanted design support for mutual consent at various stages of online conflict, including sending and receiving read receipts. Here, the research team illustrates what this might look like.

a more mutually consentful read receipt affordance, in which one user could indicate whether they were open to others knowing whether they had read messages, and the other user could indicate whether they wanted to know if the other person had read their messages. Essentially, this would result in only allowing read receipts if both parties mutually agree they want to reveal and receive that information. As shown in Fig. 2, users could opt in to both send and receive read receipts, which would allow users to only be notified of read receipts only when mutually compatible.

5.1.3 **Designing to Increase Attunement**. Finally, users and therapists both talked about how important it was to know *how* something was meant, and nonverbal cues such as tone, facial expression, and other gestures were lost in text-based online communication. Therapists discussed how attuned communication is responsive and specific to the issue, context, and relationship. A positive aspect of online communication is that many platforms already offer easy transitions to voice or video calls from text-based messaging, allowing users to easily channel switch. Some of our participants discussed how they incorporated channel switching into their conflicts and how they liked to follow online discussion with an in-person check-in.

To help facilitate higher attunement between people online, the online neurodivergent community has created tone indicators [13, 50, 62]. These especially help with detecting serious, genuine, joking, and sarcastic tone in text posts and messages. This demonstrates how communities are innovating to meet their needs for higher attunement and context during text-based communication in the absence of design support.

Past work has also shown that it is possible to promote higher levels of empathetic communication through rephrasing suggestions when writing messages and comments [69]. Similarly, design interventions could make suggestions to users as they're composing their messages to incorporate best practices for conflict, such as rephrasing accusatory statements as "I"-statements. Users also discussed how nonviolent communication suggestions in emails and text-based messaging could help facilitate more respectful, difficult discussions online. These ideas are shown in Fig. 3



Fig. 3. Participants imagined ways to provide more attuned communication with each other, including highlighting and suggesting non-violent communication. Here, the research team illustrates what this might look like.

5.2 From Designing for Individuals to Designing for Relationships through Perspective Taking

Digital communication technology has generated a unique context for the study of conflict and difficult conversations. Unlike in face-to-face settings, where the pace is rapid and often relies on non-verbal, implicit cues [54], online communication typically involves written, explicit, and easily measurable decisions. Additionally, unlike a face-to-face conversation, the ways that people communicate with each other are intentionally facilitated through design.

Historically, HCI and UX research has focused on an approach to user or human-centered design which emphasizes ease of use as the ultimate design goal [56]. However, as our participants have shown, just because it is *easy* to do something, such as leave someone "*on read*," does not mean it leads to a great user experience, as it also generated anxiety for our participants when the situation was reversed and they themselves were left "*on read*." The concepts of *trauma-informed* [11, 35, 61, 68], *frictionful* [16] and *interpersonal* [7] design, alongside *post-userism* [9], *relational* HCI [26] and *entanglement* HCI [19] have already begun to trouble this, by explaining that often, what is easiest for users is not actually what they would have preferred to have done in hindsight, and it can be a suboptimal or even harmful design goal.

Our results partially confirm this, as our participants discussed how it was easier online to use more harsh and accusatory language, such as "you" statements (as opposed to "I" statements).

However, users also wanted to prevent such instances and brainstormed ways technology could intervene. Frictionful design [16] discusses how friction can interrupt mindless interactions to prompt moments of reflection and mindful interaction. In our findings, users suggested many interventions that introduced frictions into the conflict process, such as suggesting rephrasing messages and suggesting questions to ask the other party. Trauma-informed computing [11, 35, 61, 68] emphasizes the six principles of trauma-informed care, and of particular relevance to this work is safety, including emotional safety. Emotional safety includes being attentive to signs of discomfort and ensuring interactions are mutually respectful [27, 60]. Users wished there were a way for them to be reminded to take a break to regulate, such as by using DBT (dialectical behavioral therapy) [43] skills, showing a desire for design support aligned with trauma-informed principles.

Therefore, we pose the question of what it could mean if the field designed with relationships as the subject of research and design, rather than individuals, and suggest research methods based on psychology literature. To quote Frauenberger [19], "to shape who we want to be in this world, we should be designing meaningful relations, not user experiences." One of the techniques we relied on as we interviewed our participants was *perspective taking*, in which we prompted users to reflect on design affordances from both the perspective of one using and receiving communications with the feature or affordance. So for example, read receipts were often viewed as helpful when our participants received that someone else had read a message, however, using read receipts felt more troubling, and our participants had many strategies to work around them. The context of conflict may also uniquely surface these perspective-based differences of opinion, as communication during conflict is especially challenging and high-stakes for people's relationships [57]. Another technique that could be beneficial is shifting participant recruitment for co-design and research from individuals to dyads or groups when designing features that affect people in such contexts. This is common at the Gottman Institute [24], which researches couples' therapy, conflict, and attachment. Shifting the subject of research to people's relationships could generate a more complete picture of how design impacts users at various points in their relationships.

LIMITATIONS

Our sample of participants includes people who are willing to speak on and reflect about conflict that has occurred in their life, which likely differs from the population at large. Our participants were also primarily in their twenties, which may impact the transferability of the findings. Additionally, insights gleaned from therapy also reflect what is known based on a population of people who are aware of and willing to work on their own interpersonal skills. Similarly, our work is built on an assumption of good faith intentions from all parties. However, in controlling, violent, or otherwise abusive relationships, this guidance may not apply. While valuing relationships in design can facilitate more fulfilling online interactions, there are limits to the value the framework provides.

POSITIONALITY

We have studied online conflict across many platforms and contexts, which inspired our thoughts towards centering relationships in design. One of the concepts that has influenced our thinking on this topic is the Indigenous concept of relationality [17, 46, 47, 81], which is "the acknowledgment that we all exist in relationship to each other, the natural world, ideas, the cosmos, objects, ancestors, and future generations, and furthermore, that we are accountable to those relationships" [47, 81]. This concept prompted the research team to more deeply explore what it could mean for designers to center relationships, rather than individuals, in the design process. However, as non-Indigenous researchers, we chose not to engage with it more deeply because "Indigenous information literacy is enacted by Indigenous practitioners only" [46]. Our positionality as non-Indigenous scholars requires

that we do not practice or appropriate Indigenous scholarship by drawing connections between our work and relationality. We thank the scholars whom we have cited here for their work and how it has developed our thinking.

6 CONCLUSION

The goal of this research was to explore the ways in which design can support people in navigating conflict effectively, drawing from therapeutic best practices and people's lived experiences. We found that across our participant groups, they often discussed similar themes on navigating online conflict. These included negotiating consent before conflict, the importance of emotional regulation and pausing, and the trade-offs of engaging in conflict online compared to in richer channels. Our analysis also revealed that, on occasion, participants may have chosen computer-mediated communication channels because it made it easier to avoid best practices for conflict. For example, participants said using text-based channels allowed them to use harsher language. Our temporal model demonstrates opportunities for design to intervene to support relationships during interpersonal conflict before they begin, throughout the conversation, and in the resolution. These findings ultimately highlight the tension between designing with a focus on supporting the relationships needs to be viewed as a separate subject of the design process, with support needs distinct to and inseparable from the individuals that comprise them.

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