

Designing for Civil Conversations: Lessons Learned from ChangeMyView

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ABSTRACT

Research has shown that people all over the world, and particularly Americans, are divided over many issues – from immigration and gun control to economic and foreign policy. Information bubbles further contribute to these divisions: People prefer to consume content they feel familiar with and see views they agree with. Yet, pluralism and viewpoint diversity are necessary for a well-functioning democracy. In this paper, we explore how we can design interfaces that dial down partisan antipathy and allow users with opposing viewpoints to understand one another. We study ChangeMyView (CMV) subreddit, a community that encourages users to change their opinion by inviting reasoned counterarguments from other members. We use interviews with 15 CMV members to gain insights about the design mechanisms and social norms that allow this community to function well. We also explore how we can replicate such civil interactions between users with different ideologies on other platforms.

INTRODUCTION

“Cyberspace does not have the power to make us anything other than what we already are. Information doesn’t necessarily lead to understanding or change. It is a revealing, not a transforming, medium. ... Understanding or change happens, but it is as rare and as hard to get to online as it is anywhere else”—Stacy Horn [24].

In the past few years, there have been growing concerns that the United States is becoming increasingly politically polarized [10,14]. According to a 2014 Pew Research study, Republicans and Democrats are more divided along ideological lines than at any other time in the last two decades [10]. Liberals and conservatives prefer to live near their fellow partisans. They say they would be unhappy welcoming someone with a different political viewpoint in their family [10]. A 2016 follow up to this study found growing ideological divisions along educational and generational lines [11].

These results show a divided society where individuals with opposing ideologies are increasingly keeping apart from one another. Americans are divided on issues like gender equality, climate change, gun control, foreign policy, etc. Such divisions preclude public deliberation that can help people make better decisions and uncover new solutions [18,25]. They also hurt communities by reducing opportunities to gain social capital from individuals with

opposing views [38]. The polarized views of the public are also firmly embedded in their elected representatives and this prevents a lot of meaningful progress.

It is challenging for people to listen to perspectives that contradict their own views [25,32]. Some scholars have warned that when users are afforded unprecedented access to information from around the world, they are likely to exclude political opinions with which they disagree [33]. This has led to concerns that the Internet may promote an increasingly polarized citizenry [17,44]. Prior research has also shown that while political discussions and public deliberation are important for healthy democracies, they face challenges online [17,21,39]. Many online spaces mirror and in some cases, reinforce polarization. For example, Adamic & Glance studied the linking patterns of political bloggers and found that liberals and conservatives link primarily within their separate communities [2]. Researchers have also argued that information filters like recommender systems and search rankings isolate people in information bubbles that further contributes to polarization [35,41].

In this research, we set out to study how interactive systems can help mitigate this growing polarization by enabling civil discussions between users with different ideologies. We wanted to understand how designers can create online spaces where users can have serious but cordial conversation about delicate issues with others they disagree with. We believe that enabling such discussions would help users find common ground, build public trust, mitigate polarization and improve our collective ability to find solutions to common problems.

To this end, we chose to study Change My View (CMV)¹ subreddit, a discussion forum where users invite others to change their view on any opinion by providing reasoned arguments. We wanted to understand: What motivates many CMV users to continue being open to changing their view? What drives users to engage in meaningful conversations with people they disagree with? What design features and social norms of the CMV community help its users engage in civil conversations about sensitive topics

¹ www.reddit.com/r/changemyview

that do not devolve into fights? Does posting on CMV really change people's minds?

To answer these questions, we conducted participant observation on CMV and interviewed 15 members of the community. We interpret our findings in light of social psychological theories of how environmental and social cues influence behavior in interpersonal situations. We also discuss the implications of these findings for designing spaces that motivate constructive discussions on other online forums.

We begin with a discussion of previous research in HCI on communicating across differences. Following this, we briefly discuss gamification and Focus Theory of Normative Conduct. We build on this discussion later to unpack our findings about CMV. We then present our study design. Next, we briefly describe the CMV community followed by our findings. Finally, we discuss the lessons that we can learn from this case study for design of other communities that foster civil conversations.

RELATED WORK AND THEORETICAL BACKGROUND

Communicating Across Differences

While online communities lower the barriers for anyone interested in participating in public discourse, selective exposure [16] prevents people from accessing diverse perspectives because individuals favor information that reinforces their current views. Many online spaces for discussions are clustered into groups of like-minded users [28,39]. Researchers have shown the prevalence of “echo chambers” or “filter bubble” effects in social network sites [12,19]. Associating with similar others can be reassuring, but this tendency can exacerbate polarization. On the other hand, exposure to diverse viewpoints can contribute new information and lead to better decisions [21].

Many researchers in HCI and CSCW have looked into bridging across political differences [4,12,20,21,30,43]. They have introduced tools, interfaces and social mechanisms that discourage polarization by promoting listening and encouraging exploration of diverse opinions. For example, ConsiderIt [25], an open-source deliberation platform developed at the University of Washington invites users to think about the tradeoffs of a proposed action by creating a pro/con list. Added social layers allow users to browse others' lists and include the points they like into their own list. This allows users to gain insights into others' perspectives. Reflect [26] promotes active listening and deliberation by adding a space next to every comment and asking users to summarize the points they hear the commenters making. Munson et al. deployed a browser extension that showed users feedback about political lean of their reading behaviors [31].

We build on this rich body of work to consider how individuals who oppose one another can learn to think and behave in ways that may be seen as constructive and improve the quality of their online contributions. This

problem is complex and challenging [21]. Some researchers have argued that displaying opposing views can influence people to more strongly adhere to their original position [30,45]. However, on CMV, users often listen to opposing positions and change their original view. We use the case study of CMV to derive design principles that can guide the creation of interfaces that aim at encouraging people to be open to changing their views and facilitating civil discourse across differences.

Theories of Behavior Change

This paper explores how the game elements of CMV and social norms of the community encourage civil conversations. We draw from social psychological theories of behavior change, specifically *Focus Theory of Normative Conduct and Gamification*, to explain the behavior of CMV members. We briefly describe these theories in this section.

Gamification

Gamification is an umbrella-term that describes the use of game design elements in non-gaming systems to improve user activity and user retention [9,22]. It is becoming an increasingly popular approach for improving engagement in learning activities within interactive system design [9]. Gamification aims to increase motivation by engaging with users' competitive urges and increasing their intrinsic enjoyment in a task [37]. It provides rewards to users through powerful social psychological processes such as self-efficacy, group identification and social approval [3].

In a meta-analysis of gamification studies in computer science, Hamari et al. found that in a majority of cases, gamification yields positive outcomes but these effects are dependent on the context being gamified and the qualities of the users [22]. Moreover, studies in behavioral economics [15] and gamified systems [23] have found that competition-based incentives that are central to gamification can undermine participants' motivation. In this paper, we explore the effects of gamification on users' civility in the context of CMV and analyze how the demotivating effects of gamification reported in prior literature are often avoided on CMV.

Focus Theory of Normative Conduct

A number of theories on behavioral influences of norms and norm activation have been developed within research on the psychology of behavior change and applied within HCI and CSCW research to understand and influence online communities [37]. For example, Chen et al. explored how users respond to social norms on MovieLens [6]. They evaluated the effects of sending users an email newsletter containing information about the median performance of similar individuals or the performance of an average user. They found that it increased contribution by those below the median by 530%, and decreased contribution by those above the median by 62% [6]. Sukumaran et al. experimentally demonstrated that users tend to confirm to standards of thoughtfulness in commenting behavior set by others on online news discussion sites [43]. Postmes et al.

found that when users share a common social identity on an online community, they are more susceptible to group influence and stereotyping, despite participant anonymity [36].

In this paper, we use Focus Theory of Normative Conduct, one of the most influential norm theories, to ground our findings. We are interested in understanding the implications of this theory for creating online dialog between individuals who disagree. Next, we briefly describe this theory.

Focus Theory of Normative Conduct, proposed by Cialdini et al. [7] distinguishes between three different types of norms: descriptive, injunctive and personal. Descriptive norms are beliefs about what most people tend to do in a given situation. They provide frequency information about the behavior of important reference figures or groups [7,13]. They motivate behavior by providing evidence about what will likely be effective or adaptive in a given situation. They provide a decisional shortcut by offering the idea that one can usually choose efficiently and well by imitating what most others are doing [7].

Injunctive norms are beliefs regarding what ought to be done in a situation. They constitute the moral rules of a group and they motivate behavior by promising either rewards or sanctions externally imposed by others [7]. Lastly, personal norms are defined as self-expectations based on internalized values [42]. They reflect commitment with moral values and are experienced as feelings of personal obligations to engage in or avoid particular behaviors, irrespective of external award or sanction. The influence of descriptive, injunctive and personal norms often coexist but distinguishing between them serves to acknowledge the complexity of normative processes [13].

We will later return to Focus Theory of Normative Conduct to see how it can explain the civil behavior of CMV users. We will build on this discussion to suggest designs that promote civil interactions on other platforms.

STUDY DESIGN

Our study was approved by the Institutional Review Board (IRB) of [anonymized]. We conducted 15 in-depth, semi-structured interviews with CMV users in Spring and Summer 2017. We recruited our participants through private messages on Reddit. Our participants included the CMV creator (P-9), three CMV moderators (P-4, P-6 and P-8) and 13 users who submitted or commented on CMV recently. Fourteen of our participants were male and one was female. Participation was voluntarily, and no incentives were offered for participation.

The interviews generally lasted between 30 to 50 minutes. Participants were asked about their first experiences on the subreddit, why they continue posting on the subreddit, and what makes them change their view when they post a submission. We collected and read participants' postings on CMV before the interviews and prompted them about those

postings to get further insights. We conducted all our interviews over phone, on video or through chat.

Throughout the course of the study, we conducted participant observation on CMV. We studied how users interact with one another and submitted our own posts and comments on CMV discussion boards to understand the dynamics of the community.

Analysis

We transcribed data from our interviews. Next, we conducted an inductive analysis of these transcripts [29]. Our analysis began with open coding in which we summarized our data with short phrases on a line-by-line basis [5]. Examples of these codes included "Changing opinion in small but significant ways" and "Believing that safe spaces discourage debates." These codes stayed close to the data. Further iterations of coding resulted in the formation of categories such as "Crowdsourcing information" and "Phrasing questions to elicit responses." These categories were consolidated into eight themes. In addition to the ones reported in the paper, themes such as "Tactics employed to earn deltas" and "Tactics employed when posting submissions" emerged but were excluded in further analysis. Finally, we established connections between our themes and these connections contributed to the descriptions that we present in our findings.

THE CHANGE MY VIEW (CMV) SUBREDDIT

Reddit is a community-driven news aggregation website that claims to be "the front-page of the internet" [40]. It hosts active sub-communities called subreddits on a wide selection of topics, ranging from serious to absurd, and from general to niche topics. Reddit allows its users to *submit* text posts or links in any of its subreddits which are then voted and *commented* on by other members. While users usually have considerable control over what they post or comment on the site, each subreddit has moderators who are usually regulars of the subreddit and who monitor the quality of posts on it. Subreddits differ widely in how strictly their moderators regulate them.

Change My View (CMV) is a subreddit that describes itself as "a place to post an opinion you accept may be flawed, in an effort to understand other perspectives on the issue" [8]. Once users submit a post in which they describe an opinion that they are open to changing (Table 1), other members comment on that post and argue for the other side. CMV asks users to "enter with a mindset for conversation, not debate" [8]. The subreddit is "dedicated to the civil discourse of opinions, and is built around the idea that in order to resolve our differences, we must first understand them" [8]. Kal Turnbull², the CMV creator, told us that his goal behind creating CMV was not to facilitate debates but

² We are using the CMV founder's name with his permission. We have anonymized the names of all other participants to protect their privacy.

to motivate conversations that help users understand different perspectives.

Table 1: A Sample of Posts on CMV

| Serial no. | Submission Title |
|------------|--|
| 1 | CMV: The concept of "Golden Ages" doesn't make sense outside of a subjective context. |
| 2 | CMV: "Undocumented Immigrant" is a much more meaningful and instructive term than "Illegal Immigrant". |
| 3 | CMV: Transgender identity is a form of mental illness, and the ideology of the trans community is both harmful and riddled with inconsistencies |
| 4 | CMV: Unless you're conventionally attractive, dating sites are a waste of time. |
| 5 | CMV: Women-only bursaries are an offensive double standard and shouldn't be allowed. |
| 6 | CMV: The high death tolls inflicted by the West in conflicts abroad aren't because Western civilization is unusually immoral, but because of its scale and capabilities. |
| 7 | CMV: The USA (or who ever the most powerful nation is) has a moral and ethical responsibility to act as "world police". |
| 8 | CMV: Smoking should be legal in bars. |
| 9 | CMV: Reading/watching celebrity gossip doesn't make you stupid. |
| 10 | CMV: If the Republican party disbanded, the US would be better off. |

As of September 4, 2017, CMV has 432,521 subscribers and hundreds of active users at any given time. CMV users submit posts on a wide range of topics including economics, entertainment, health, history, philosophy, politics and technology. However, many of the popular threads on CMV contain political discussions. This makes it an interesting place to investigate how users navigate their political differences online. Table 1 lists a sample of posts on CMV.

Delta System

The community gamifies the process of changing the view of post submitters by implementing an award mechanism called the delta system. Submitters are expected to award “delta,” a digital award, to commenters who successfully change their view. This convention serves as a way to acknowledge as well as programmatically track change in views, and the people that change them. Some researchers who have studied CMV in the past have made use of delta

mechanism and number of votes to quantitatively analyze the mechanisms behind persuasion [46,47].

CMV also keeps a track of number of deltas each user has received. It maintains daily, weekly, monthly and yearly digital scoreboards called “deltaboards” that rank users based on the number of deltas they have received in the last day, week, month and year respectively. The community also annotates members’ usernames with the number of deltas they have received in the discussion threads.

CMV reminds the submitters that “a reversal or ‘180’ of opinion is not required to award a delta,” and that they “may award more than one delta within a post (within reason)” [8]. Deltas can only be awarded by *submitter* to other *commenters*. Commenters cannot award deltas to submitters even if the submitters end up changing their view.

Next, we discuss our findings. We will begin by discussing the users’ motivations for joining the conversations on CMV and attempting to change the submitters’ views. Next, we will explain what motivates users to submit posts on CMV and invite others to change their views. Following this, we will discuss the factors that help discussions stay civil on the community. Here, we will also consider the insights provided by social psychological theories of behavior that we discussed in the Theoretical Background section. Finally, we will consider whether posting on CMV really changed users’ views.

MOTIVATIONS FOR JOINING THE CONVERSATION

As we discussed before, it can be difficult for people to hear opinions that are contrary to their own. What then motivates people to be regular contributors on CMV? In this section, we discuss the factors that motivate users to join conversations on the community.

Earning Deltas

Some participants pointed out that they were driven by earning deltas, especially when they first began posting on CMV. Participant P-5 said:

“The first time I got a delta, it felt like a big deal and I was so pumped and it made me go into a bunch of threads for the purpose of just getting deltas.” - P-5

A few participants also said that they challenge themselves on earning a delta and work hard to produce convincing arguments that compel submitters to award them deltas. This indicates that gamification introduced by the delta system is successful in increasing participation, especially by newcomers.

Changing Other People’s Opinions

CMV rules require submitters to personally hold the view they submit and be open to it changing [8]. Many of our participants said that they comment on CMV because it provides them an opportunity to persuade other people’s views. For example, Participant P-6 said that while he likes being a CMV member with one of the highest number of

deltas and finding himself on the community leaderboard, he is much more motivated by submitting quality content that change other people's views rather than by earning deltas. Participant P-14 said:

"I think a lot of it is just personal vanity. Just thinking that you can have fun arguing with people. Just trying to be right, it feels good." – P-14

Engaging in Threads that Interest Them

Some users are neither particularly interested in earning deltas nor changing other people's view. They like participating in the friendly and civil environment facilitated by the community and engaging in conversations about topics that interest them.

"I would say, [I comment on] anything with the philosophical nature. I enjoy those even though they're not always the best ones for earning deltas because it can get into very vague discussion. I have a natural interest in that, I suppose." - P-3

Many participants said that they keep coming back to CMV because they find conversations with other members meaningful and valuable. CMV rules require submitters to post only if they are willing to have conversations with those who reply to them, and to be "available to start doing so within 3 hours of posting" [8]. This rule ensures that commenters get prompt responses to their postings and the conversations are engaging.

Learning Techniques of Persuasiveness

Some participants said that they comment on CMV to learn the techniques of persuasiveness. For example, Participant P-7, who is a law school student, said:

"I try to learn persuasiveness as best as I can. I would say my motivation is to get better and learn what it takes to actually convince somebody as opposed to just telling them they are wrong." - P-7

This indicates that some CMV members may be using the site to hone their conversation skills so that they can apply them in a professional capacity.

MOTIVATIONS FOR POSTING A CMV SUBMISSION

Crowdsourcing Information

Our interviews suggest that many users post on CMV to crowdsource information about topics that they are interested in from other members who they expect have been thinking about those topics or who have knowledge of those topics. Many participants said that they post questions about topics that they honestly are unsure about. They want to see if they are missing any crucial information. Many participants insisted that they are willing to change their beliefs if they find credible evidence that point to the contrary.

"...so I was interested in finding out, is there more information to it or if these statistics aren't actually telling the full picture." - P-12

Finding Face-to-Face Conversations Inadequate

Some participants felt that they cannot force face-to-face conversations about certain topics if the other person is not interested. They argued that having a community dedicated to enabling discussions on any topic helps provide an opportunity to deeply and freely explore subjects they are interested in. We also found that CMV moderators take pride in the fact that some conversations on the site run for months on end.

"One of the downsides to the personal relationship is that if I'm more invested into the conversation than he is, then it's not something I can force him to talk about. But, if I'm going to a place like CMV, that's kind of the whole point. I can essentially keep diving into the argument with someone or multiple people until I'm blue in the face." - P-11

Some participants felt that their social group is not a good match to ask questions they are interested in. They also worry that asking sensitive questions may result in confrontations or fights with individuals who they see on a day-to-day basis.

"I'm not a very confrontational person actually. Like, in person, when people in the office are talking politics, I'm usually sitting on the sidelines...but I'm a lot more assertive in this subreddit." - P-14

A few participants noted that the written nature of CMV encourages more considerate responses because people take time to reply as opposed to being spontaneous and less thoughtful as in face-to-face conversations.

Finding Other Online Spaces Unsuitable

Some participants observed that discussions on sensitive topics quickly turn ugly on other social media websites like Twitter, Facebook and Youtube. They noted that on most other subreddits, users are more committed to defending their own views rather than understanding others' perspectives. They pointed out that many subreddits are dedicated to specific groups and the conversations aim at enabling a safe space for like-minded individuals to share their thoughts. They felt that such communities are not suitable for civil disagreements.

"Most of my comments were actually in r/conservative [subreddit] before I got banned because I like debating people in a respectful way but obviously r/conservative is just a safe space for conservatives...You can't really have a safe space and too much debate going on at the same time, so it's kinda hard." – P-13

Participant P-9 pointed out that CMV is unique among online communities in that it encourages posters to invite opposing opinions. Other participants noted that CMV provides them a space where they can invite users to present facts and then make their own judgments based on those facts even on topics that may be politically incorrect to question. For example, Participant P-10 said:

"I'm not trying to be a bad person about it. I'm just trying to research and analyze what I'm perceiving reality to be and trying to understand it. I'm not going to rule out anything. I've just got to go off everything I'm told and I need to reach my own conclusions. If that's not socially acceptable, well that's too bad." - P-10

Some members noted that the simple design and easy-to-understand rules of CMV attracted them to it. They liked that CMV allowed them to post pseudonymously because it frees them to engage in discussions without fear of being judged by people they know for holding controversial views.

"A lot of people in society are judgmental and there's a lot of my views that are probably not socially acceptable, so I don't want my employer, family, friends to know exactly what goes on in my head." - P-10

Some participants said that the general nature of the subreddit makes it easier for them to ask one-off questions on CMV instead of looking for a subreddit dedicated to the topic and understanding its rules of posting. Participant P-2 pointed out that many subreddits have strict regulations about the type of questions that can be asked there and that makes it difficult to quickly post submissions on those subreddits. Participant P-12 said:

"...If I wanted to talk about whether school staff should be able to take disciplinary action on campuses, there might be another sub that might be decent for that but I wouldn't know about it. I think, CMV acts as the catch all discussion forum for everybody." - P-12

Finding an Active CMV Community Engaging

Participants said that CMV users are intelligent, knowledgeable and active on the community. This makes posting on CMV rewarding. Having a large number of users makes it likely that at least a few users would be interested in and/or have knowledge of each topic that gets submitted. CMV rules also encourage commenters not to post any *low effort* comments [8].

"It's not the same crowd you get on like Youtube or some other places like that where you're just going to get ridiculous feedback with no substance at all. There's a lot of substance, lot of intelligent people with pretty good knowledge of the topic." - P-10

Some participants enjoyed sparking meaningful discussions among other users. A few submitters distinguished what content is valuable to them from what is valuable to others. They argued that even if a lot of the arguments are not new to them, they may be new to other people who read their thread and may benefit them.

WHAT FACTORS HELP DISCUSSIONS TO STAY CIVIL ON CMV?

In this section, we discuss the different factors that help discussions to stay civil on CMV. We will also discuss what explanations the theories of gamification and Focus

Theory of Normative Conduct offer for the expressed attitudes of users.

Delta Mechanism

Many of our participants pointed out that the incentive of earning delta encourages them to be civil to one another. For example, Participant P-7 said:

"I think people who just want to argue till they're blue in the face and get angry at one another find other places to do that. But delta is kind of the carrot on the stick that sort of discourages that. So most of the participants on CMV don't want to offend the OP (original poster) because you're supposed to be trying to compete for a delta." - P-7

We observe that gamification provides a strong explanation for this behavior. The use of delta and deltaboards provides strong competitive cues to CMV users and motivate them to adopt behaviors that earn them reputation. On CMV, this meant that the users adopted a politer tone in their conversations. However, this does not mean that award mechanisms like deltas alone are sufficient to increase contributions in any community. As Paharia thoughtfully pointed out, gamification cannot help a system if the entity being gamified does not already have some intrinsic value for the users [34]. We expect that CMV users already value being able to change the perspectives of other users but weaving gamification into this process deepens their engagement and desire to participate.

Strict Enforcement of Rules by Moderators

Many of our participants appreciated the rules that the community has put in place. CMV rules explicitly forbid users from being rude or hostile to other members or accuse others of being unwilling to change their views [8]. Many participants felt that a strict enforcement of these rules has been critical in maintaining the civil nature of conversations. Participant P-4, who is a CMV moderator, said that the moderation on CMV tends to be stricter than other subreddits because the community moderators believe that it makes people more cautious in how they are posting and encourages polite posts. Participant P-5 said:

"I've seen threads go ugly so fast [on other subreddits], and I think that having active mods helps CMV not get bogged down by trolls." - P-5

This indicates that CMV users' negative expectations of the outcome of posting uncivil comments motivates them to be more civil. Recall that injunctive norms motivate behavior by promising either rewards or sanctions externally imposed by others [7]. Therefore, CMV users' injunctive normative beliefs influence them to be civil.

Observations that Civil Comments Are Successful

Many participants pointed out that they repeatedly observed that users who were able to change the views of OPs (Original Posters: Users who submit posts) were those who were polite in their posts. This inspired them to be civil in their own comments. Participant P-4 said that when he

started posting on CMV, his comments were not successful in earning deltas, but he gradually learned the etiquette of the community as he spent more time reading posts. Participant P-9 said:

“Yeah, I think, it’s not just the fact that we have a rule that says, don’t be hostile because if it were as easy as just saying that, the world would be a much easier place. I think it’s because people can see time and time again what works.” - P-9

We argue that descriptive norms of the community help explain this behavior. As we discussed earlier, descriptive norms motivate behavior by providing frequency information about the behavior of others. Here, we observe that participants see activity on CMV discussion boards as a guide to what other successful members are doing, with a view to following them and making a representative contribution themselves. Hence, we infer that descriptive norms help shape civil discussions on CMV.

Moral Obligation

Some participants felt that it was critical for society to have a place where users with different political ideologies can dissect and find solutions to common problems. They felt responsible for posting on CMV to create a dialog with people they may not agree with beforehand. A few participants said that they felt rewarded when they changed what they considered bigoted opinions of other posters. Participant P-1 said:

“If you change someone’s view to go from ‘I hate women’ to ‘I understand why feminism is popular’, that’s actually rewarding to me. It’s like, wow, just through the stupid internet anonymous web community, I’ve done something positive with my little 20 minutes of procrastination.” - P-1

Personal norms provide a strong explanation for this behavior. Recall that personal norms reflect individuals’ commitment with their internalized values. CMV users’ perceived moral obligations to contribute constructively to CMV encourages them to be civil in their posts. Therefore, we argue that personal norms play an important role in motivating civility on the community.

DOES CMV REALLY CHANGE MINDS?

We began this research to investigate whether CMV can really change users’ minds. We found that not everyone who participated in CMV changes their view. Next, we discuss the different factors that our interviews reflect inhibit change of perspectives on CMV.

First, many submissions on CMV don’t get enough responses. As a result, the submitters don’t receive sufficient information to consider changing their views. Participant P-2 argued that in such cases, submitters may even feel discouraged from posting again on CMV.

“The nature of the responses and how much visibility you get depend on the nature of the question and the timing of the question. A lot of people post a lot of things and don’t

get any traction and get one or two responses, which is not very helpful.” - P-2

Second, many participants argued that the community cannot lead to a change of perspectives unless the users are truly open to hearing others’ opinions. As our epigraph reflects, the Internet can often be a *revealing*, but not a *transforming* medium. Some participants felt that many submitters post on CMV to “soapbox”³ their point of view instead of engaging in a genuine inquiry about the topic. A few participants suspected that CMV attracts the attention of partisan groups who exploit the platform to spread their ideology.

“I feel like we’ve had a few attempts by primarily right-wing sites who try and basically use CMV to spread their bigoted propaganda.” - P-6

Third, some participants argued that whether someone can change their view on CMV depends on the topic at hand. It may be easier to change someone’s view on whether it is better to pour milk over cereal [1] than to change their view on climate change [27]. Participants felt that some issues are closely tied to individuals’ sense of identity and fundamental experiences and it may be impossible to change their view on them in an online forum. Participant P-14 said:

“I don’t think you can just type a wall of text at somebody and change how they feel about morality or God or the economy. I don’t think you can do that.” - P-14

Finally, it is difficult to determine whether the community encourages users to change their views or whether users who already are open to change are attracted to the community. Participant P-11 insisted that the self-selection of users who post on CMV biases participation only by people who want to hear different opinions.

Although participants who posted submissions on CMV typically did not change their view completely, they acknowledged that they found posting on CMV useful. They recognized the weaknesses of some of their own arguments and developed a more nuanced view of the topics they submitted. As P13 put it:

“When I posted it, my ideas were pretty solid but after a while, I realized that half of them did not make any sense. People gave counterarguments to what I thought were solid points, which they weren’t.” - P-13

Some users anticipated using information gathered on CMV in real-life discussions. Most importantly, participants said that posting on CMV helped them develop empathy towards users they earlier disagreed with. This shows that interfaces like CMV can play a crucial role in helping

³ Soapboxing refers to announcing one’s opinion in the service of pushing an agenda and not being open to hearing opposing viewpoints.

individuals get exposure to diverse perspectives, promote civil conversations and reduce polarization.

Next, we analyze what lessons we can learn from the design principles and the social norms of the CMV community to build systems that encourage users to be more civil towards other members.

LESSONS FROM THE CMV COMMUNITY

In this section, we build on our findings to discuss implications for the design of systems that support civil conversations between users with opposing political views. We present these implications as tentative recommendations that provide useful guidance for designers but need experimental validation.

Motivating Different Users Differently

Our findings show that users contribute to commenting on CMV submissions for a variety of reasons. Some users are interested in earning deltas, others want to change people's minds and still others want to practice their debating skills. Similarly, users post submissions for reasons ranging from crowdsourcing information to engaging with a vibrant community. Despite their differences in motivations, these users all make valuable contributions to the community. We argue that there is potential to encourage different users towards a community-wide goal of creating constructive conversations without trampling on their reasons for posting in the first place. For example, instead of showing the same set of topics to every user, designers can deploy machine learning tools that infer users' interests and motivations based on their past behaviors, and personalize the CMV page for every user. Other gamification designs can be developed to increase contributions from users who show an interest in earning deltas. Similar mechanisms can be used to motivate participation on other online communities that aim at encouraging civil discourse.

Implications of Focus Theory of Normative Conduct for Civil Engagement

Prior research has found that the different norm types described by Focus Theory of Normative Conduct – descriptive, injunctive and personal - can influence users positively or negatively [13,37]. Our findings show that descriptive norms can help encourage more users to participate as well as be civil in their discussions with opposing members if they observe that the typical contributions in the community are civil. One disadvantage of descriptive norms in this context is that it may be difficult to influence civil behavior in a new or existing community if the existing participants don't display such behavior. Our findings on how users are motivated to post and comment on CMV suggest that community creators can consider creating example content that suggests the desired norms and use gamification to encourage civil contributions.

We found that injunctive norms highlighted via strict enforcement of rules by CMV moderators plays a key role in keeping discussions civil. Moderation also keeps out

trolls and discourages posts by users who are not interested in hearing others' point of view. Therefore, we posit that online communities can encourage civility by enforcing rigorous moderation.

Our interviews also suggest that how users frame their questions affect the responses they receive. Participants discussed that they phrase their submission in a way that shows they are open to changing their views so that they get more responses. CMV requires submitters to explain the reasoning behind their view in at least 500 characters, and this rule also encourages users to be more reflective in their posts. We argue that such regulations and social expectations can encourage users to be more thoughtful and polite on other communities too.

Finally, we found that personal norms play a key role in encouraging users to be civil. Prior research has suggested that when users' personal norms align with the objectives of a project, users are likely to contribute beyond levels that descriptive norms motivate [37]. Therefore, mechanisms that appeal to users' moral values and highlight the importance of their contributions can encourage users to post politely.

Implications of Gamification for Civil Engagement

We also saw that gamification encourages CMV users, particularly those who are new to the community or are high delta-scorers, to be polite with other users. While the delta mechanism and deltaboards on CMV encourage high performers to compete with one another, the focus of the community is on meaningful conversations, and users are not explicitly judged by their delta scores. Deltaboards are relegated to the sidebar where high achievers can choose to engage with them and other users can ignore them. This makes it more likely that participants are not demotivated by competition. Achievement oriented individuals choose to focus on earning deltas and ignore normalizing cues whereas other users are influenced by social and personal norms to continue contributing. Thus, a combination of gamification and social and personal norms create an environment on CMV that fosters meaningful and polite discussions between users, even on topics that divide them politically.

We argue that designers should consider gamification as well as Focus Theory of Normative Conduct when developing interfaces that aim at encouraging users to be civil to one another. If the competition generated by gamification is not upfront and is focused on those members who are already achieving strong results, it can encourage other users to contribute constructively through a variety of other motivations encouraged via descriptive, injunctive and personal norms.

Curation of Topics

We saw that many submissions do not get enough responses on CMV. Moreover, our interviews and observations suggest that individuals are not open to

changing their views on every question. We believe this may often be appropriate too. For example, we shouldn't allow users to argue for adoption of Nazi ideology.

In future research, it would be interesting to conduct a systematic analysis of the number of responses and quality of conversations that different CMV submissions generate and discern the factors that lead to different types of responses. We expect that factors such as the language of post, topic, time of posting and indications of openness to change may affect responses to any submission. Such an analysis can guide the content curation on systems that aim to generate rich, constructive conversations.

LIMITATIONS

This study has some limitations. First, our results are from interviews with a small sample of CMV users who were willing to talk to us. Social desirability bias might have influenced our interviewees to under-report motivations and behaviors that may be viewed as unfavorable. Additionally, CMV users who we did not talk to may be motivated by reasons that did not surface in our interviews. However, we did not get any significantly new information during our last interviews, which indicates that we reached theoretical saturation.

Second, our approach is not experimental. An experimental approach may surface the relative importance of descriptive, injunctive and personal norms and gamification on CMV members' civility.

Third, we only studied a single community, Change My View, and therefore our data is tied to the circumstances surrounding that community. As we discussed, users self-select to participate on CMV so they may already be more open to hearing others and be civil. Future work should analyze the implications of gamification and norm theories on other communities that enable constructive conversations.

CONCLUSION

In our divided society, the subreddit r/changemyview is a breath of fresh air. Some of the discussions (like about milk on cereal [1]) are silly, and some topics are unsuccessful. But surprisingly often, individuals engage with important issues of the day, and prove Stacy Horn (in the quote in our epigraph) wrong—change happens. Maybe social media can indeed be a transforming medium and a listening medium—if we design for it.

ChangeMyView was deliberately created by Kal Turnbull with this goal in mind. Turnbull told us, *"It basically spawned from this idea that sometimes it can be quite hard for people to expose themselves to alternative perspectives on certain issues."* Learning from the successes and limitations of this site, we highlight the opportunities and challenges in designing other spaces where understanding and civility thrive. We found that social and personal norms, gamification and moderation mechanisms create a space on CMV that fosters productive discourse. We hope

to inspire future research into how these different influences can be combined to improve the quality of conversations between users with different political views.

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