

**An Exploration of a Criteria Based Online Facilitation Tool:  
A Preliminary Examination of an Innovative Concept**

by

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Submitted to the Graduate Faculty of the  
Department of Behavioral and Community Health Sciences  
Graduate School of Public Health partial fulfillment  
of the requirements for the degree of  
Master of Public Health

University of Pittsburgh

2020

UNIVERSITY OF PITTSBURGH  
GRADUATE SCHOOL OF PUBLIC HEALTH

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**Abstract**

This thesis explores the utility of a tool designed by a private individual to help activist groups brainstorm and find consensus for decisions. A version of this tool was created for a human services nonprofit to use. Although the resulting data was not extensive, likely due to COVID-19 being a disruption, the public health implications and possibilities for future research are explored with comparisons to other tools and methodologies. Human service nonprofits may benefit in the future from tech tools using the consensus based brainstorming.

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## **Preface**

I would like to thank my advisor and thesis committee, not only for their support on this thesis, but for supporting throughout my time in graduate school. I also would like to thank Leo Proechel for sharing his idea with me and letting me explore it, and the nonprofit I partnered with for their willingness for collaboration. Finally, I would like to thank my parents for always supporting my education.



## 1.0 Introduction

This study sought to gain insight into whether an online application for consensus facilitation could be useful for human service organizations. This tool, the Collective Action Network (CAN) attempts to provide a new way for organization stakeholders to brainstorm on decision making. The concept behind CAN is to encourage users to present the criteria for solutions to problems, rather than proposing specific solutions. By discussing what criteria a solution needs, users would not talk past each other by simply advocating their point of view, but be able to find common points of interest that would allow solutions that could satisfy a majority of users. CAN was created by Leo Proechel for the purpose of facilitating decentralized activism. His idea was to use CAN for environmental groups I was intrigued by the concept and wanted to explore whether it had utility for human service nonprofits that would be interested in hearing from different voices in their community, but would likely not have the time or resources to conduct focus groups. Although I was ultimately interested in how CAN could give nonprofit clients more decision making power in an organization, I reached out to a small nonprofit serving autistic people that I had a prior relationship with, in order to have organizational staff try CAN out for a preliminary exploration.

## 2.0 Background

CAN was a passion project, inspired by facilitation principles described by Miki Kashtan, a sociologist. These were used to facilitate discussion among Minnesota state legislators in a contentious debate on child custody legislation, which ultimately was able to be resolved with a bill being passed unanimously by following a philosophy that dictates focusing on principles rather than positions, and encouraging perspectives to “shift” with each other rather than compromise (Kashtan, 2016). Kashtan’s specific language is unique but those who have studied group dialogue and facilitation will note that the blueprint is very compatible with other professional advice on negotiation such the book *Getting To Yes* (Fisher, Ury, & Patton, 2011) which also dictates a philosophy of focusing on interests rather than positions and avoiding a win-lose mentality.

In reviewing literature to see how CAN could be utilized for human services, there was, predictably, little information specifically on case studies on using technological tools for collaborative decision making in human services. My review ultimately found two main points of reference for information on how to consider the potential strengths and weaknesses of CAN. For digital collaboration tools, the main example is within the domain of urban design and planning. The second point of reference would be experience based co-design (EBCD) methods used in health and human service settings, but generally within public sector settings. EBCD is a process where staff and clients are video recorded discussing their experiences at their institution, eventually followed up a set of focus groups, where participants watch edited recordings of the videos, and use them to springboard discussion of issues that can be improved (Donetto, Pierri, Tsianakas, & Robert, 2015).

These two points of reference, along with some conceptual literature, allow for considering CAN theoretical strengths and weaknesses as an example of a public participation co-design method. This literature review examines both to pull out points where CAN may be useful or may be problematic. A third, slightly less salient point of comparison would be the Delphi technique, particularly used online (e-Delphi). The Delphi technique is less salient as it is used for gathering consensus on pre-existing questions from relevant experts, whereas with the

co-design methods, the process is open to the participants themselves generating and framing the topics of discourse. The Delphi technique is a survey method, where a group of people with expertise in an area anonymously answer questions on the topic, provide some explanation on their answers, then are able to see the other anonymous experts' answers and explanations, revise their answers and explanations accordingly, repeating the process a few times, generally going three rounds (J. Skulmoski, T. Hartman, & Krahn, 2007)

Towards the end of this research I was acquainted with a fourth method of collaborative decision making, during an online conference, Pol.is (Stempeck, 2020). Pol.is likely has the most parallels with CAN. It is an online platform that functions as a kind of emergent or self-generated survey. Users post comments around a general topic, and then other users can indicate if they agree or disagree. Eventually, with enough participation an artificial intelligence can represent the emergent factions as clusters (public health researchers would find the generated visuals very reminiscent of concept mapping). This encourages users to post comments that can bridge the divide between faction. The main case study for this system has been in Taiwan, where the government created two systems based on the Pol.is software, vTaiwan, and Join to allow citizens to propose and vote on policy. Though the government was not bound to follow through (and typically did not) these programs served as case studies for using the internet for public participation in a democratic process, and finding solutions that move beyond gridlock (Horton, 2018; Hsiao, Lin, Tang, Narayanan, & Sarahe, 2018). Because Pol.is is essentially still an early experiment in innovating collective decision making, the strengths and weaknesses, especially outside the context of citizen-government engagement, are not established. However, its goals in facilitating consensus-based decision making are related to CAN's. While it cannot currently serve as a point of reference for CAN's potential strengths and weaknesses, it raises possibilities for CAN's future, which will be discussed in the conclusion.

## 2.1 Potential Areas of Strength

Starting with some conceptual literature on public engagement, it can be extrapolated that CAN theoretically has some potential advantages, compared to traditional face-to-face participation. CAN can allow for more input compared to traditional methods, because there are no strict time limits for online discourse the way that there may be when it's necessary to have participants all together in one room. Diluting of time limitations allows participants to be more active and make greater contributions (Rowe & Frewer, 2005). The relevance of this is emphasized when looking at literature on EBCD, where it's notable that time burden for staff is a challenge (Larkin, Boden, & Newton, 2015).

Part of the concept of CAN is using a web-based technology to produce productive discourse. Currently internet-based discourse has some negative associations. The internet allows individuals to operate in a way that is anonymous, removing in-person social dynamics. It is well known, even to lay people that this has very negative social consequences, with academic literature indicating that anonymity can increase in-group polarization (Christopherson, 2007) and provide cover for various predatory behavior (Kang, Brown, & Kiesler, 2013). However there is also the concept that internet anonymity has positive impacts such as allowing more of an equal playing field, empowering individuals with marginalized social statuses by removing visual cues and the potential for projecting stereotypes (Christopherson, 2007).

Focus group research functions best with a small and relatively homogenous group of people. The input that CAN could elicit is comparable to a focus group where participants are not interacting face to face. They do not have to be anonymous, but the social dynamics of face to face interaction would not be present, and with a large userbase (even if they were to make usernames with their actual names) they may not be known by, or know, the majority of the other users they interact with. A central question is whether the principles CAN is based on and using for service development provides an opportunity to play to the potential strengths of internet discourse through facilitation, and mitigate the negative aspects discussed above. Researchers who have looked at online co-design in urban planning have suggested that it can play to the aforementioned strengths of not being based in face to face interaction, where participants with different social status (for example, being less educated, or being part of a

marginalized group) may not have the risk of intimidation that they could if they were meeting in-person, reducing communication barriers (Hofmann, Münster, & Noennig, 2020).

It would be interesting to see how CAN effects overall trust levels between an organization's staff and clients. One thing discussed in EBCD literature is that it is a practical application of the Contact Hypothesis where potentially mistrusting groups gain trust (Larkin et al., 2015). Contact Hypothesis is a psychological theory that states members of different groups will reduce negative associations with each other, if said members encounter each other in a neutral environment and context (Sigelman & Welch, 1993) In the case of EBCD the groups would generally be staff and patients. On one hand some things emphasized as being necessary for this to work is groups being on equal footing and having common goals, which CAN is explicitly designed for. On the other hand the potential relative anonymity of users means that group affiliation could be murky, which could limit how much Contact Hypothesis is taken advantage of. There have been other online tools, such as the Net Intergroup Contact platform that have been specifically designed for this kind of Contact Hypothesis operationalization to take place (Amichai-Hamburger, 2008). While an open question on if and how CAN could improve intergroup relations, and what evolution might need to happen to make that possible, the potential for the tech tools to shift group relations into trust when so often they contribute to the polarization mentioned above, leads me to consider this as a potential strength that CAN could build towards.

Another, less ambiguous advantage of the relative anonymity, or at least potential relative anonymity of CAN, is that it removes some sensitivity issues that other participatory decision-making methods may have. For example EBDC requires that participants discuss their experiences in depth, which can be challenging as the population is discussing something stigmatized, with EBDC often in a mental health services setting. (Larkin et al., 2015) CAN theoretically avoids some of those challenges by letting disclosure be far more confidential. It's also worth noting that despite the challenges, even within settings as sensitive as mental health wards, participatory decision making in the form of EBCD seems to be useful, reducing the number of formal complaints (Springham & Robert, 2015). The established advantages of EBDC - that it allows for new stakeholders and forms of expertise to be involved in the process of

decision making (Donetto et al., 2015) - are advantages that could be brought to different human service areas, possibly with the aid of technology.

Because CAN is user directed, rather than answering questions determined by a third party it has far more flexibility compared to something like the Delphi technique, which has experts answer questions from a researcher. CAN also is based in agreeing on criteria, not putting forth solutions and working towards synthesis through iterations. This may allow CAN to have a practical function of providing quick and dirty consensus on issues that may be challenging, but would not be worth the time and expense of resolving with an iterative technique. For example, if someone were unsure about where to have a meeting, it would not make sense for that person to determine experts in meeting locations, have them complete a survey explaining which meeting location would be best, sending another survey and so on. It might make sense for that person to use a tool that will make it clear what the overall most important criteria for meeting locations is from the people they want to attend the meeting.

CAN's attempt to make a ranked criteria system is actually specifically suggested by researchers looking at urban design is start with criteria. Academics who have looked at digital collaboration in urban design approaches have emphasized the importance of setting criteria before any design decisions are made, and suggested that a brainstorming tool could be used to determine the list and weights (Stelzle, Jannack, & Rainer Noennig, 2017). This is obviously central to CAN and raises the question of whether CAN could be incorporated into other co-design tech tools or methodologies, or vice versa, if there could be future developments that build off CAN's criteria setting design.

A final aspect emphasized by literature on healthcare co-design is the importance of going outside ones comfort zone and being able to learn new ways of thinking (Boyd, McKernon, Mullin, & Old, 2012). On this note CAN could be an example of form inspiring content. Using an unconventional method may lead unconventional results that allow services to evolve in unique new ways, that could not be planned out according to an established strategy.

## 2.2 Potential Problems

With urban design participatory tech tools, there are often issues of limited users and self-selection bias, as only a small sample of people are willing or interested in using the tool, and they may not be very representative of the overall population of inhabitants or involve key opinion leaders (Münster et al., 2017). It is easy to see how this could be a problem with co-design tools outside of urban design. This also raises the issue of digital literacy, where some participants may not be comfortable with using a tech tool at all (Hofmann et al., 2020) which could contribute to skewing the user-base sample away from the population. Pulling from healthcare co-design literature, this concern is further emphasized by the importance of engaging with patients early on (Boyd et al., 2012). Even if participants are engaged by CAN over time, most of the value of co-design will be lost if they are not able to give input at the start of projects.

Conceptualization of design being something that is done by others, not something that can be participatory was limiting for some cases of EBDC (Donetto et al., 2015). It raises the question of whether participatory decision making in the form of software makes shifting mindsets on design easier or harder, and how much it depends on the individual. This may be hard to break through with CAN, because it essentially can be understood a kind of simulacrum of facilitation, but there is no true active facilitation to correct discourse or get expanded information.

Conceptual literature highlighted the importance of facilitation in pulling out as much information as possible from participants (Rowe & Frewer, 2005), and anyone who has facilitated focus groups knows the importance of probes and follow up questions. The importance of facilitation and information goes both ways, as the challenges of communicating complex information to participants was noted in literature on urban co-design tech tools (Münster et al., 2017). For comparison, a significant amount of time is spent in EBDC getting everyone on the same page by getting all participants a baseline of information. Staff and patients are interviewed and their interviews are edited into films to show before small group discussions, setting up a single narrative for all participants to engage with. (Larkin et al., 2015) Without a facilitator to elicit, aggregate or provide information from participants, CAN assumes

that users can put forth their own criteria without contextualization. It will be critical to understand how much of a barrier this is, and consider ways that it may be addressed.

In EBCD there is often a conflict with the wider culture or structure, where a method of bottom up service design runs up against issues like information or resources not being accessible to all participants. EBCD requires that brokers lead projects, and the egalitarian principles can be challenging to live up to when not all participants have the same actual power. (Larkin et al., 2015). With things operating in a decentralized, virtual setting, having the conventional leadership necessary for co-design may be more difficult, and the downsides of information access could foreseeably be more problematic than in traditional co-design.

Previously in discussing the way that CAN would compare with EBCD it was stated that CAN has a relative level of anonymity. However, that is dependent on how it is used. There is no way to enforce anonymity and users are able to reveal who they are. For this project, because the partner is a small nonprofit, with management being the piloting users, participants will know who each other are. Looking at CAN as a consensus tool, that is a disadvantage relative to the Delphi technique, where anonymity keeps participants from being biased in their responses (Donohoe, Stellefson, & Tennant, 2012). Even in ideal settings using CAN is, by design, far less controlled than Delphi, which makes it faster and more flexible, but makes anonymity non-enforceable even if it is determined to be desirable. Another disadvantage that CAN may have in comparison to the Delphi technique is an ability to account for “failure.” A lack of consensus can be understood as a valuable research finding for researchers using a Delphi technique. For something that is far more self-directed like CAN, the only possible responses to a lack of success would be 1) keep trying indefinitely, 2) give up, 3) if possible, move to an in-person meeting, possibly with professional facilitation.

Another challenge that CAN could have compared to the Delphi technique might be a momentum issue. Delphi has a single driver, and the literature suggests they set firm deadlines, and follow up with participants to keep them responding according to the time frame. Should CAN achieve enough popularity within an organization, that success could be self-reinforcing with everyone using it because everyone else uses it, making it a reliable way to resolve dilemmas. Achieving that may be difficult without consistent motivation. While the Delphi method can apply pressure ethically, participants might be compensated for example, with CAN



it would be ethically dubious, and probably impractical to somehow mandate that stakeholders contribute to suggesting issues to resolve and their criteria for solutions.

Finally, returning to co-design, a very practical aspect that academics suggested is a veto system, so solutions that are fundamentally impossible do not come up (Stelzle et al., 2017). While CAN is focused more on criteria than solutions, there is no veto system. It remains to be seen how practical the criteria that CAN is likely to generate are, and how they would compare to traditional face-to-face codesign decisions.

### **2.3 Alternate Applications**

Although the literature review has mostly been done within the context of CAN as a co-design tool, its utility for building consensus is not only within the context of engaging external stakeholders. This was is focused on CAN's potential for human service organizations, but CAN could have applications for conventional businesses. There has been significant discussion on collaborative management and shared decision making within traditional business with recent discussion of concepts like "holacracy" (Bernstein, Bunch, & Lee, 2016). It has been suggested that shared leadership is the future of the "knowledge work" that is the domain of skilled professionals.(Pearce, 2004). While it is outside the scope of this research to determine how this tool could be used by management outside co-design or other purposes with a specific focus on outside stakeholders, it is clear there is interest outside human services and public health in collaborative decision making, and it may be that CAN would be an appropriate addition, at least as a quasi-experiment, in an organization outside the scope of my interest and expertise. Indeed, it may be that without some of the potential problems discussed above (of treating stratified stakeholders as if they were on a horizontal field), it will be easier to maximize CAN's value.

**Table 1 Comparison Table**

Method	CAN	Delphi	EBCD	U_CODE	Pol.is
Online?	Yes	Can be	No	Yes	Yes
Issues it can be used for:	Any issue that needs consensus	Can be used for any issues where participants with expertise can be recruited	Improving healthcare, typically within the context of long term mental health care	Urban Planning	Any issue that needs consensus
Intended outcomes	Brainstorming solutions to problems with consensus	Achieving consensus (typically small group of experts)	Quality improvement	Public Participation	Facilitating consensus (ideally among a very large group)
Anonymous?	Can be anonymous based on participant preference	Usually	No	Yes	Kind of, participants could be identified by metadata
Participants selection	Any stakeholder. Stakeholders can invite other stakeholders	Carefully selected individuals with relevant expertise	Staff and Clients of a health facility	As many stakeholders as possible	As many stakeholders as possible
Participant commitment	Self-determined and flexible	Typically completing at least 4 surveys. Conventionally these may take up to 2 weeks.	Hours of interviews and group discussions	Self-determined and flexible	Self-determined and flexible
Interactions	Participant can engage each other directly.	Participants indirectly respond to each other	Participants must engage each other directly	Respondents can only engage each other during a focus group	Comments can be enabled or disabled
Overall project length	Flexible (planned exploration is a month)	Variable, but would typically need several months to go through four iterations	Typically a year or more	Project is ongoing, will continue to evolve for years to come	Can be used indefinitely

### 3.0 Methods

I reached out to and secured the support of a nonprofit based in Massachusetts, with two offices out of state. This nonprofit is a human services organization with a mission focused on helping autistic people and their families. The organization's values dictate that they often reach out to autistic people to serve on their board as well as staff positions. The organization does not have a strictly horizontal structure, but maintaining a sense of community where all stakeholders have respected voices is an important aspect of the organization's value system. Due to their focus on having a respected, collaborative community, I believed they were appropriate to test out a tool based in decentralized brainstorming.

I recruited participants from the organization to try the tool out. Phone interviews were conducted with 6 of the participants at the beginning of the study. These interviews had target durations of 15 minutes, they typically 21 to 22 minutes. The interview guide is as follows (I have removed the name of the organization to be sensitive to confidentiality):

1. When (organization) must make a significant decision, what is the process they use to get input from staff? From clients?
2. Overall, would you say (organization's) decision making is very vertical where management makes programmatic decisions on behalf of staff and clients, or somewhat horizontal where management collaborates with staff and clients?
3. In the event of some significant internal disagreement on organizational policy, how might the disagreement be resolved?
4. How does geography and distance play to getting input from different stakeholders?
5. What do you feel are the strengths and weaknesses with (organization's) decision making process? (if additional prompt is needed; what do you do better than other social work/human service non-profits, and what is something you think could be improved?)
6. How does (organization) use technology to get input from decision makers? What do you feel are the strengths and weaknesses of (organization) relationship with tech?
7. Is there anything else that you would like to say about (organization's) decision process?

Participants were then given access to the application, and asked to give a good faith effort in trying it out. The exact email was as follows:

“Thank you everyone who I have interviewed so far. Although I worked at (organization) a few years ago, it is good to have some up to date context for this project.” Attached is the consent form I read:

*Below are two links. The first is the app I am asking you explore. The developer, Leo, calls it CAN, an acronym for Collective Action Network. He has made a version just for this project called \_\_\_\_\_CAN. The second is a video tutorial Leo made to explain the concept behind CAN, and how to use it. The basic principle is that if there is an issue that needs a solution, you can put forth criteria for what you want to happen, and then see if proposed solutions match the proposed criteria. It's like a facilitated meeting, but without a facilitator, or a meeting. I think the video makes things clear.*

*I have two hypothetical scenarios I made for examples. You can "roleplay" and put forth criteria that you think would be useful, to get used to using CAN. Since my scenarios are just imaginary, it may or may not be easier to put your own brainstorming prompts that deal with real issues, and brainstorm around those. That will be using the app for its intended purpose. They do not have to be serious challenges, but ideally they would be issues that are either complex or important enough that you would like everyone's input in. I suggest trying this app as a place for issues you will bring up at weekly meetings, you can use it to brainstorm in advance, or get input from someone who would not be at the meeting but who is a relevant stakeholder. However, feel free to use it however you like. This is an exploration of CAN, not an evaluation based in specific objectives.*

*On that note, you may share this link with other \_\_\_\_\_ stakeholders, in fact I would be happy to have more people I can send surveys to, provided they **do not currently receive services**. In my submission to the IRB I stated that I would not include clients as research subjects, as that would automatically make the research more sensitive.*

*I am requesting that you try to use the app for maybe 10-15 minutes a week at least at first. If you like the app feel free to use it as much as you like, and if you give it a shot and don't like using it, it's fine to not bother with it at all after you try it once or twice.*

*Feel free to email me with any questions. I will not use \_\_\_\_\_ CAN other than checking it, since I am not an organizational stakeholder, and I want to see how you organically use it.*

*Thank you again for your willingness to participate in this research. I hope that you enjoy trying out this new tool.”*

Participants were able to provide researcher questions, criticism, and general feedback at the participants' leisure. After three weeks an online survey was sent to all participants with a mixture of open and close ended questions to get both qualitative and quantitative data. All interviews were completed over the phone.

The two hypothetical scenarios I created to demonstrate CAN were;

*Hypothetical scenario 1: A West Coast organization for Autistic adults wants to get more people involved, has heard (organization) has different social groups and interest series. They are humbly requesting advice from (organization) What does an organization starting social groups from scratch need to do for them to be successful?*

*Hypothetical scenario 2: There is a grant/RFP available for helping plan a PSA campaign on autistic issues, in particular correcting misconceptions. If (organization) applies for the grant what should its education priorities be?*

After one month I sent a link to the survey I created, which asked them to evaluate CAN in a few different areas, explain their reasoning, and consider how it could be improved and what it would be best used for in the future. I had planned to perform qualitative analysis on the survey results and the interviews, however with a lower than expected survey response my analysis primarily consists of identifying the themes that emerged from the preliminary interviews.

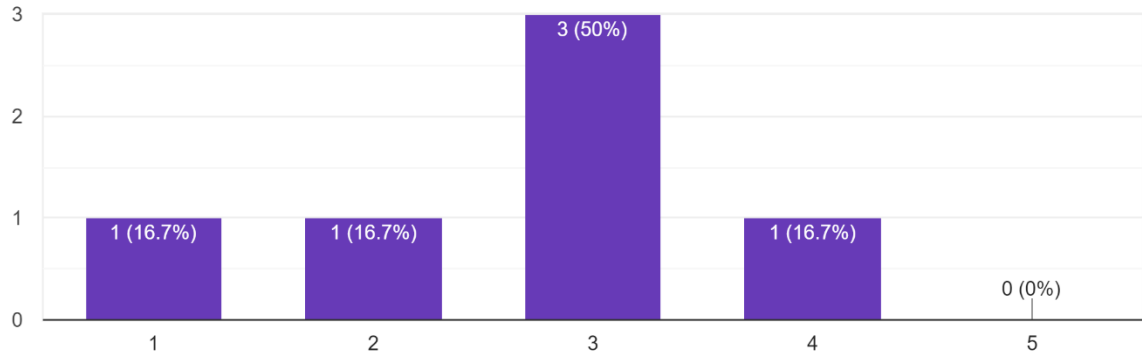
## 4.0 Results

Engagement with the program was somewhat limited. A total of 18 unique user log-ins were made. There were five discussion posts made by users, two of which were made by the same user. In other words, four users brought items that they wished to brainstorm on. There were a total of six completions of the survey, a third of the participants who made user log-ins. The survey responses were mixed/ambivalent. In responding to the question on what CAN might be useful for, three of the six users said they did not know or were not sure. When asked what could be improved by CAN, there were 5 responses, 3 were unsure of what could be improved, one said “format” and one spoke about user acceptance, indicating that it was difficult to evaluate CAN as a participant because it was reliant on having a certain amount of engagement, which just did not happen.

The survey results indicated a mixed reception to CAN, though with only six responses there are no definitive conclusions to be drawn. Out of five possible points, half gave it a three indicating ambivalence. Despite mixed feelings in response to potential improvements, one respondent stated “format” without elaboration, one respondent described the need for greater user acceptance, which can be considered an external issue as will be discussed below, and the remaining three stated they did not know what could be improved.

On a scale of one to five, one being the best, five being the worst, what is your general impression of CAN?

6 responses



**Figure 1 User Impressions**

## 5.0 Discussion

It is possible that with more user engagement the ratings would have become polarized. Since survey respondents were not sure what they could be improved, it may be that the 3/5 scores were not indicative of a holistic assessment, so much as being unsure of how to assess CAN without the necessary engagement.

There are a few reasons that this engagement may have been so limited. First and likely foremost, the unexpected Covid-19 crisis was likely significant, demanding people's time, energy, and attention, and pulling them away from engaging with an explorative project. After contacting the executive director of the organization with concerns about a lack of engagement with the platform, she sent a mass email out to staff asking that they log in and spend 10 minutes engaging with the platform. While this may have salvaged some engagement, it also perhaps gave participants the impression that the optimal way to engage was with a "lump sum" time commitment, spending 10 minutes on the app right away. That would be somewhat antithetical to the proper use of a discourse-based app, where intermittent but regular check-ins would allow users to see posts by other users, and build off of those, replicating the dynamic of a group discussion. Just as in a focus group it would not be best practice to allot a 10-minute chunk of time for a participant to speak, asking participants to use 10 minutes of time may have unfortunately altered the dynamic of engagement. To be clear, this is not to be critical of the executive director who was struggling to find a solution to ensure follow-through on the commitment the organization had made, while undoubtedly struggling with the sudden unexpected burdens that Covid-19 had placed on her own time and energy.

While Covid-19 was undoubtedly a major issue that led to relatively low engagement, there were other challenges that may be worth considering, firstly in the underlying principles of the platform's design, and in how it related to the specific context of the organization using it. The underlying philosophy of the platform, as discussed in the introduction comes from negotiating/mediating. As discussed in the background, CAN assumes that there is a conflict that can be resolved, or better yet avoided altogether, if people put forth their underlying criteria determining what outcomes they want. Eighteen users looked at the app, but there were only a



handful of issues they wanted to propose brainstorming around. Users did not log in, suggest a topic that they felt was important to brainstorm around, and then simply forget about it or not continue to engage with other brainstorming prompts. It's possible this indicates that the first step for utilizing the app, suggesting issues that need resolutions brainstormed around, was challenging or unintuitive to participants. The principles this app is based in are used to solve ongoing disputes. Using them for a method that essentially required users to be proactive in suggesting things that could be disputes might be overly challenging for users. Suggestions for future iterations of the software are discussed below.

Another reason for the relatively low engagement may have been the specific context of the organization. The organization was selected because prior experience indicated that the organization had a collaborative culture and was thus an appropriate place to test a tool based on collaborative decision making. However, this approach may have backfired, by essentially presenting the organization with a tool that was functionally redundant, solving problems that the organization did not have to deal with. In the preliminary interviews when asked about whether the decision making of the organization was vertical or horizontal, all 6 staff interviewees were strongly of the opinion that the organization was very horizontal, very collaborative. Some interviewees even indicated that the collaborative culture went to far, or at least had some downsides. For example one interviewee stated that the culture of the organization made it hard to set clear priorities, because the executive director was consistently taking in information from various members of the staff and community served, and thus management priorities would consistently shift. Conversely when interviewing the ED, she felt the collaborative nature constrained her decision making, giving an example of an innovative idea she had, that was ultimately not supported by the board and external advisors.

Furthermore, when asked how the organization would handle significant internal disagreement, a central issue the platform was intended to deal with, the interviewees generally either answered the question as a hypothetical, saying what they thought would happen if there were a serious conflict in the absence of real world examples, or emphasizing how people who worked in the organization are able to talk to each other and were able to compromise before disagreements became significant issues. One interviewee could describe a specific disagreement she had with the ED, where according to her the ED "sided with the immediate risk, without any

clear data, and I see it as an eventual risk, that I'm willing to bear until September, but it's not a data based decision...". and the ED herself found that it could sometimes be challenging to resolve conflicts due to the nature of the community served stating "It's difficult if you have one person who is ridged, who in unable to compromise, or who is unable to think about somebody else's point of view, that is difficult..." and then later "I think also if you do have people who are less flexible, participating it can be a real problem coming to a consensus, or on the other hand if you have people that are not willing to speak out or speak up that's a problem also."

For the most however part the interviewees indicated that the organization was a place where everyone could be heard and give relevant input, with the concerns being around efficiency and clarity, rather than conflict or priority schisms. One interviewee stated "I do think everyone is allowed to say their two cents. Everybody. There is no culture of a backlash when people disagree. And management is accessible." Another stated "I think that a strength is that we actually do get input from a variety of stakeholders. (The ED) is not just sitting at her desk being like a dictator, 'oh this is how this is going to happen.' We do get a lot of input." These quotes on management being accessible and getting input from people across the organization, were consistent across all 6 interviews.

Since CAN's main intent was to find solutions to dilemmas in collaborative decision making, it is possible that staff at the organization did not feel much motivation to engage with the platform, due to the fact that the culture of the organization already had a very healthy degree of collaborative focus. If people already knew they could say whatever the needed in a meeting and they could be satisfied with the resulting discourse, facilitation, whether conventional, or in the form of an online platform, might lack any practical appeal. This might be evidenced by the survey response to the question of what participants liked about CAN; "I like the idea in theory but didn't feel the tool made the decision making process more efficient for our organization."

The same person responded to a later question on the survey, regarding how they liked the criteria focused concept, "I think CAN is only helpful to an organization if the organization cannot easily convene decision makers and/or often has disagreement with decision makers. It is also a good tool if decision makers are looking for a more analytical approach to decision making."

These responses possibly indicate the lack of relevance that CAN had for the organization testing it, which would partially explain the lack of user engagement.

## 6.0 Future Directions

Future iterations of CAN may be served by having some method to help users determine what would actually be appropriate to use this app for, perhaps bringing it closer its facilitation roots by simply by specifying it as tool for resolving issues that failed to be resolved during meetings.

A more complex possibility, that might allow for a lot of possibilities for users long term is having a mixed system where users can first put forth inquiries as conventional polls, where other users can select one item or another, and then automatically transition to the criteria based brainstorming only for decisions that are deadlocked. For example, if an executive staff member in the autism human service organization that tested CAN wanted to know if the organization should host a panel on teaching methods, or developing job skills, they could post an option A or option B, to this hypothetical version of CAN. If 2/3rds or more of participants want the teaching method panel, it would be clear that there is no real reason to have a facilitated discussion, when there is already consensus.

A more complex possibility still, would be to incorporate or combine the Pol.is methodology with CAN's principles. Pol.is's mapping of factions, and CAN's solution criteria principles could be compatible ways to find solutions to entrenched conflicts. CAN could benefit Pol.is by expediting the process of finding common ground for agreement encouraging users to consider their proposals that are the most controversial, and the most popular, and breaking them down to their underlying criteria. Pol.is could help CAN by providing a starting point for the discussion, that let's users simply make comments on an issue, without having to go through potentially challenging introspection early on.

There are significant potential disadvantages to combining Pol.is and CAN's methods. Pol.is is commercially available software, that can cost thousands of dollars to set up. Although the company provides an open source version with out the ability generate reports, setting that up would still require a team with sufficient technical knowledge and time. Pol.is also might not solve the central problem that CAN faced in this project, of user engagement. Pol.is has been

tried out on a governmental level, where conflict between the interests of different constituencies is essentially intrinsic. It is not clear what, if any value it would bring to small human service nonprofits. Conversely, it is possible that if it was implemented in response to specific controversies, CAN would be a viable way of generating solutions, in its current state. CAN might just overly complicate processes that are perfectly adequate independent of each other.

For future research there are three possibilities I recommend. These are not mutually exclusive; a research project could fit all three. The first possibility is testing CAN in an environment that is highly susceptible to controversy, such as a community planning process, a city council trying to navigate constituencies with highly opposed needs, or a nonprofit with a large enough population served traditional surveys and focus groups are inadequate to fully represent the wider. With sufficient resources, it may be worth having a timed comparison evaluation with Pol.is, and evaluating what participants think of them in comparison with each other.

It would also be worth considering CAN in another human service organization, that seeks to expand it's decision making process to include clients. This direction could be expanded upon to include clients, consumers, or participants who are not frequently engaged with an organization's decision-making process. The literature on EBCD's suggests that participatory decision-making can be useful even in highly sensitive and bureaucratized human service settings and that new methods to expand on those potential benefits should be implemented. CAN, and other collaborative decision-making tech tools should be further studied as a way for human organizations to incorporate client perspectives directly into decision making.

There are three main ways that CAN could researched further in the future. These directions not mutually exclusive. Firstly an organization that currently has a very vertical decision making style but is seeking to incorporate more decision makers could use CAN for this purpose. The research question would seek to determine how CAN helps, or fails to help the horizontalization od decision making. This direction could be focused on the inclusion of clients, consumers, or participants who were previously not engaged with an organization's decision-making process. Since The literature on EBCD's suggests that participatory decision-making can be useful even in highly sensitive and bureaucratized human service settings and that new methods to expand on those potential benefits should be implemented, CAN, and other

collaborative decision-making tech tools should be further studied as a way for human organizations to incorporate client perspectives directly into decision making. The downside is that finding a suitable organization may be difficult and that even when a suitable organization is found, participation might be limited by trust issues, if clients are not used to having a voice in decision making. Research questions would have to be carefully specified to ensure they are evaluating how well CAN is helping the horizontalization process, not whether the process itself goes well or not, which would be a much broader question with many other variables to analyze.

The second possibility would be to partner with a professional facilitator who can bring CAN to resolve a pre-established issue or set of issues. This would have the advantage of specifically seeing how CAN can resolve conflicts, a core part of its concept which was not something this research was able to do, and to see how CAN compares to conventional, in person facilitation. Understanding CAN's strengths specifically as a tool for decision making in the context of resolving conflicts may be highly relevant for an indefinite period as the COVID pandemic continues to disrupt regular meetings. The downsides are that this would obviously require establishing some relationships, and CAN would essentially be tested in a controlled environment, limiting the resulting data's generalizability.

The third possibility would be to do a comparison trial with CAN and Pol.is, or another appropriate tech tool. This could be structured like any comparative evaluation, which means there are multiple possibilities of how to specifically conduct it. An organization could use one tool for a certain amount of time, and then switch to another, two organizations that are similar in size, focus, and structure could each use one of the tools, or a very large organization could segment it's community into two groups, each using one tool, possibly with a switch off. This would allow for a quasi-experimental design, which would produce the most generalizable data. The main obstacle for this research while CAN is currently a passion project created to be fully open source (meaning it is free) Pol.is, though it does have an open source version with reduced features, can cost thousands of dollars for the commercial version. It would likely be best to further validate CAN with other research before following up with this research method.

It is also worth noting, CAN and Pol.is could theoretically be combined, especially because, Pol.is does have an open source version. In theory it is possible to use the code that is available for free and combine it with CAN's code. In principle, the two programs are

compatible, Pol.is allows shows what factions exist in a debate, and passively encourages users to find common ground, CAN attempts to provide a structure that allows people to make proposals that are as generally acceptable as possible.

Technology offers new opportunities for collaborative decision making, even though it often currently seems to be a primary factor in our communities being extremely polarized. It may be possible to use technology bring communities together to find solutions for public health and social welfare, there are certainly extremely innovative concepts and models for how to do this. We are at a point in history where it seems thing to do is to keep trying these ideas out until we can say with some degree of certainty what is viable and what is not. This is a time to “throw things to the wall and see what sticks.” While the circumstances of Covid-19 make this thesis highly inconclusive, I hope that it may be one small step on a long journey to finding new ways of effectively democratizing organizations that serve public welfare and giving people more of a voice in what services they receive.

## Appendix A Consent Form

NOTE: All interviews began with me reading the following consent form and asking if they had any questions (to save space I am including it here one time). I have replaced the name of the organization and the name of the executive director throughout the transcript. These replacements are noted with asterisks.

You are being asked to participate in a research study. This research is being done for a master's thesis by Zachary Michaels in the Behavioral and Community Health Sciences department at the University of Pittsburgh's Graduate School of Public Health.

The purpose of this research is to explore if an online tool for brainstorming decisions has utility for human service non-profits.

The research will consist of a brief interview (likely 15-30 minutes), to be completed before accessing the tool, and a survey to be completed after you have been able to use the tool with other employees and/or stakeholders in your organization for roughly a month.

During the interview you will be asked about how your organization operates and makes decisions. Your answers are confidential. Neither your name, nor the name of your organization will be disclosed without additional consent. The tool will be taken offline after this research is concluded, unless a plurality of users request it remain online.

The general mission and some programming may be discussed in the thesis and/or presenting its findings. Screenshots or direct user quotes from the online tool may be used for illustrative purposes when presenting the research findings, however any names or other identifying information will be redacted. Outside of the researcher the only people that will know the name of the organization will be the student's thesis advisor, Dr. Steven Albert, the IRB and the creator of the tool being tested, Leo Proechel.

You may contact Zachary Michaels at zam38@pitt.edu any time you have questions about the research.



You may contact the Human Subjects Protection Advocate at the University of Pittsburgh Institutional Review Board at 1-866-212-2668 if you have questions about your rights as a research subject.

Your participation in this research study is voluntary, and you will not be penalized or lose benefits if you refuse to participate or decide to stop. Should you find the tool to not have utility or to not be worth engaging with for any reason you are not obligated to attempt to use it for any specific amount of time. There is no compensation offered for participation.

## Appendix B Survey Guide

1. On a scale of 1-10, 10 being the best, how practical do you feel CAN is?
2. On a scale of 1-10. 10 being the best, how practical do you feel CAN is?
3. Please explain your rating.
4. On a scale of 1-10, 10 being the best, how intuitive do you feel CAN is?
5. Please explain your rating.
6. How could CAN be more practical or more intuitive?
7. How much time did you spend using CAN?
8. What do you like about CAN?
9. What do you dislike about CAN?
10. Do you think that criteria-first concept works well for building consensus online?
11. Overall, what would be important to improve with CAN?
12. What brainstorming questions would you utilize CAN for? When would it be inappropriate to utilize?
13. Do you think CAN could be a way of getting more client input in decision making?  
Why or why not?
14. Do you think that CAN could be a tool for different non-profit organizations to collaborate more effectively? Why or why not?
15. What if any, ways do you think CAN would or could improve (organization)'s approach(es) to making decisions?
16. Do you feel it would be worthwhile to continue to explore CAN with other social work/human service nonprofits? Why or why not?

17. If you answered no to 18, do you think organizations outside of the social work/human service nonprofit sphere could be valid exploration partners? How so?
18. What would your review blurb (one or two sentences) be for CAN?
19. Is there anything else you would like to say about CAN and this exploration of it?

## Appendix C Screenshots from CAN

Virtual ways to support the ██████ Community **BRAINSTORM**  
about 21 hours ago 1 collaborators 4 criteria 5 proposals ██████

We are trying to find the best options to supporting our community while we are unable to hold in person meetings.

### 4 Criteria

ADD CRITERION

- Appropriate for different sensory sensitivities  
Appropriate for people who have different interests and modes of learning  
4 0
- Easy to access from mobile device  
3 0
- Reduce isolation  
4 0
- Create virtual meet ups of specific interests  
3 0

### 5 Proposals

ADD PROPOSAL

- Ongoing list of recommendations for movies or books  
100%
- Virtual Game Night for Teens  
100%
- Virtual Game Night for Neurodiverse Couples  
100%
- Study Hour for Accountability  
100%
- Intellectual Discussion Group  
0%

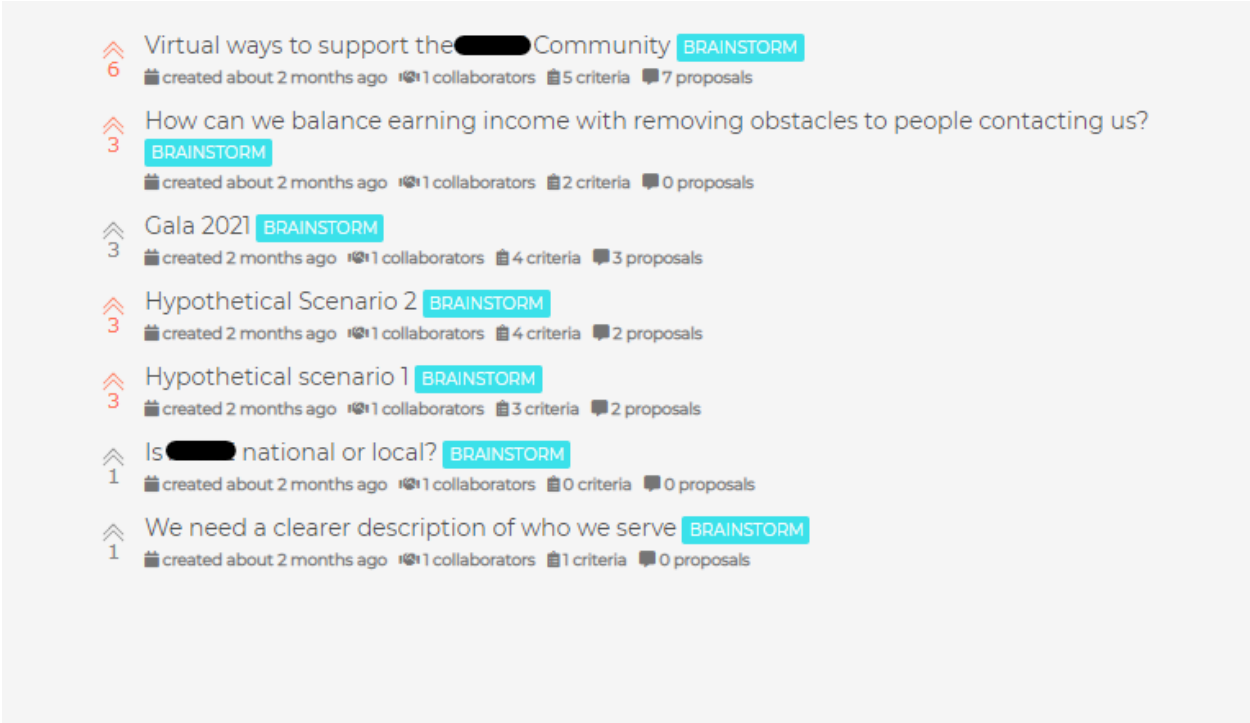
### Discussion

gmyhill  
Virtual Game Night for Neurodiverse Couples

gmyhill  
Sorry, I meant this for a proposal, not a discussion. Please delete.

[Send](#)

Appendix A Figure 1 First Screenshot of CAN



Appendix A Figure 2 Second Screenshot of CAN

Gala 2021 **BRAINSTORM**  
 3 18 days ago 1 collaborators 4 criteria 3 proposals

Gala 2021 will be in our 25th anniversary year and also the year that [REDACTED] is retiring. It is potentially also the last gala we will offer on an annual basis, as the Development Department is considering moving to a model where galas only happen on anniversary years. All of which is to say: we want Gala 2021 to be very special.

### 4 Criteria

ADD CRITERION

- Should include an honoree of some sort (3 votes, 0 flags)
- Must fit within \$80,000 budget (2 votes, 0 flags)
- must be a fun night (3 votes, 0 flags)
- It should be accessible virtually to reach a broad audience and to take place even in times of health crises that prevent in person gatherings. (2 votes, 0 flags)

### 3 Proposals

ADD PROPOSAL

- An adult with Asperger's presentation (100%)
- Dedication Video (0%)
- Some really lively and inspiring music (0%)

### Discussion

[Empty discussion area with a Send button]

Appendix A Figure 3 Third Screenshot of CAN

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