Investigating the Effect of Reduced Asynchronicity on the Quality of Social Support in Response to Self-Disclosure on Anonymous Online Community Platforms

Grant Lee (grant_lee@brown.edu)

Introduction

A subset of social media platforms that I find particularly interesting is anonymous online community platforms (AOCPs), such as Reddit and Blind. Two characteristics of AOCPs highlight their difference from other forms of social media:
1. The construction of online communities, usually surrounding a topic of discussion
2. The anonymous identities of its users

Self-disclosive behavior (Archer, 1980) on AOCPs is often illustrated by what is known as the online disinhibition effect. As defined by Suler (2004), this refers to the behavior of less restraint and more open self-expression exhibited by Internet users, as compared to face-to-face interactions. More specifically, Suler defines two types of online disinhibition:
1. **Benign disinhibition** describes interactions that are kind, in which participants reveal secret emotions and express an unusual degree of kindness and generosity.
2. **Toxic disinhibition** describes interactions that are rude, in which participants express hatred, anger and violence.

Suler also posits a number of factors that contribute to the creation of the online disinhibition effect, including the following:
1. **Dissociative anonymity** arises when participants separate their online identities from their real-life identities and consequently feel less vulnerable about self-disclosing.
2. **Invisibility** amplifies the effect of anonymity, giving participants the opportunity to not worry about how they look or sound when typing a message, and how others physically respond to what they say.
3. **Asynchronicity** of communication means that participants do not have to cope with others' immediate reactions and are able to return to the conversation whenever they are willing and able to receive the response.
4. **Solipsistic introjection** refers to the experience of another person's message as a voice in one's own head upon reading it. This is brought upon by the reader's inability to characterize the author without face-to-face cues, leading to the introjected reader filling up the gaps with their own personality and altering their own self-boundaries.

I was intrigued to understand how each factor contributes to the **benign disinhibition** effect on AOCPs. For my experiment, I focused on **asynchronicity** and how reducing asynchronicity influences the extent of "positive" self-disclosive behavior.

To do this, I have designed a social mechanism that reduces the degree of asynchronicity in online (threaded) conversations. I then explore my hypothesis:

> *A mechanism that reduces conversational asynchronicity tends to degrade the quality of social support received by participants on an AOCP that implements such a mechanism.*

Method

A total of 7 participants were invited to interact with each other via the prototype for this experiment. Ideally, the prototype would have to meet two requirements:
1. It must function like an AOCP (that is, it should fulfill the requirements of an AOCP, as defined in the Introduction section).
2. It should implement a mechanism to reduce asynchronicity.

Requirement 1: Prototyping an AOCP

To build the AOCP prototype, I employed the piggyback prototyping technique proposed by Grevet & Gilbert (2015). To fulfill the first requirement, the apparent choice of platform to piggyback off would be an existing AOCP, such as Reddit. This would be appropriate given that both benign and toxic disinhibition are prevalent on Reddit (Gagnon, 2013). However, an initial interview with the participants revealed that most of them were unfamiliar with Reddit. This unfamiliarity could translate to a lack of confidence in using the prototype, confounding the experiment.

Instead, I created a Slack workspace as a piggyback platform. All the participants had similar experiences with using Slack, which would reduce the above-mentioned confounding variable. Given that Slack would not usually be considered an AOCP, the following guidelines were put in place in order to mimic the mechanisms of an AOCP:
1. Create a Slack account using an anonymous, non-identifiable email address.
2. Use an anonymous, non-identifiable display name.
3. Do not use any message reactions.
4. Do not edit or delete messages.

The Slack workspace had two channels:
- *#prompts*: Bi-hourly prompts are sent by me here. Participants are to come up with a confession in response to the prompt.
- *#responses*: Participants are required to post their confessions here, as well as respond to other participants' confessions.

Requirement 2: Reducing asynchronicity

The second requirement is implemented by setting time limits for writing new responses. The effect that this achieves is to enforce a cap on response time that mimics that which may be expected in a face-to-face interaction. According to McLaughlin, et al. (1982), a pause just under 3.3 seconds is experienced as an uncomfortable "awkward silence" during a verbal conversation. That is to say, there is an expectation for a person to respond within 3.3 seconds of the other person's end of speech.

Of course, a period of 3.3 seconds is not a realistic threshold for an AOCP. Besides, my experiment is not interested in implementing a completely synchronous conversation. Instead, I seek to reduce asynchronicity to some degree that is reasonable for the context of AOCPs. Unfortunately, there is a lack of research that studies the time taken by AOCP users to complete the writing of their posts or comments. Instead, I chose the following time limits arbitrarily:
- Participants should post a confession **within 5 minutes** of reading the prompt, in the form of a new message in the #*responses* channel.
- Participants should post a reply to a confession **within 2 minutes** of reading it, by commenting in-thread.

Note that these time limits could not be strictly enforced within the technical capabilities that Slack provides. Instead, they were constantly reiterated to participants as a rule to self-enforce. Additionally, to ensure that meaningfulness of conversation is not compromised as a result of the response time restriction, the following rules were applied:
- Confessions should be **at least 5 sentences** long.
- Replies to confessions should be **at least one sentence** long.

Measurement

Given the rather generic definition of "benign disinhibition", it would be challenging to find a single, suitable measure. Instead, I use "quality of social support" as a proxy to measure the degree of benign behavior in conversation. To create an environment that accommodates the measurement of such a variable, I initially considered the following strategies:
- Controlling the theme of the conversation to only topics that elicit a kind response
- Setting rules to only allow benign user behavior (including moderating the conversation)

The eventual experiment design implemented neither of these strategies, as they could potentially influence the conversational environment to become performative, unnatural and artificially positive, thereby compromising the integrity of the responses. Instead, the theme of the conversation was directed by bi-hourly prompts that minimally restricted the range of attitudes that participants could express. A total of four prompts were released every two hours:

Released at	Prompt
10am	What is one happening that has made you feel especially good this past week?
12pm	Talk about something you've done that you're ashamed of (and perhaps find it hard to forgive yourself for).
2pm	Think about someone you love. This could be your partner, a good friend or family member. What are some challenges in your relationship with them? Ask the community for their advice.
4pm	What is something personal that you've wanted to get off your chest? This could be anything at all.

Participants were advised (but not required) to read the prompt within the 2-hour window, and respond with a confession within 5 minutes of reading it. In particular, inspired by Miller's approach (2020), each of these four prompts were inspired by existing confession-related topics (known as "subreddits") on Reddit:

Prompt at	Subreddits that inspired the prompt	Topic of discussion
10am	r/MadeMeSmile	Uplifting, joyful happenings
12pm	r/TIFU, r/Confession, r/AmITheAsshole	Making mistakes
2pm	r/Relationship_Advice	Relationship issues
4pm	r/OffMyChest, r/TrueOffMyChest	Secret thoughts

Following the four rounds of prompting, responding and replying, a survey was sent out to all participants to gather their qualitative opinions about their experience:

[A] General information 1. Let's say you're facing a personal problem and you seek help on an online community forum (e.g. Reddit). What sort of responses would you hope to receive?
[B] About your confessions 1. On a scale of 1 to 10, how honest were your confessions? 2. If your response was below 7, why did you feel inclined to "misrepresent" the truth? 3. Rank the confessions you wrote (10 am, 12 pm, 2 pm, 4 pm) according to how comfortable you felt writing them. 4. Think about the confessions that you had posted. How would you evaluate the quality of social support you have received for these confessions? 5. If your identity was not anonymous, how would you have written your confessions

differently?

6. If you were given more than 5 minutes to write your confessions (anonymously), how would you have written your confessions differently? In what way do you imagine the responses you received would have been different?
7. Today's prompts were actually inspired by a number of subreddits. Take a quick look at the posts in each one of these subreddits. Do you think that the posts are written in a way that you described in the previous question? Why do you think this is (not) so?
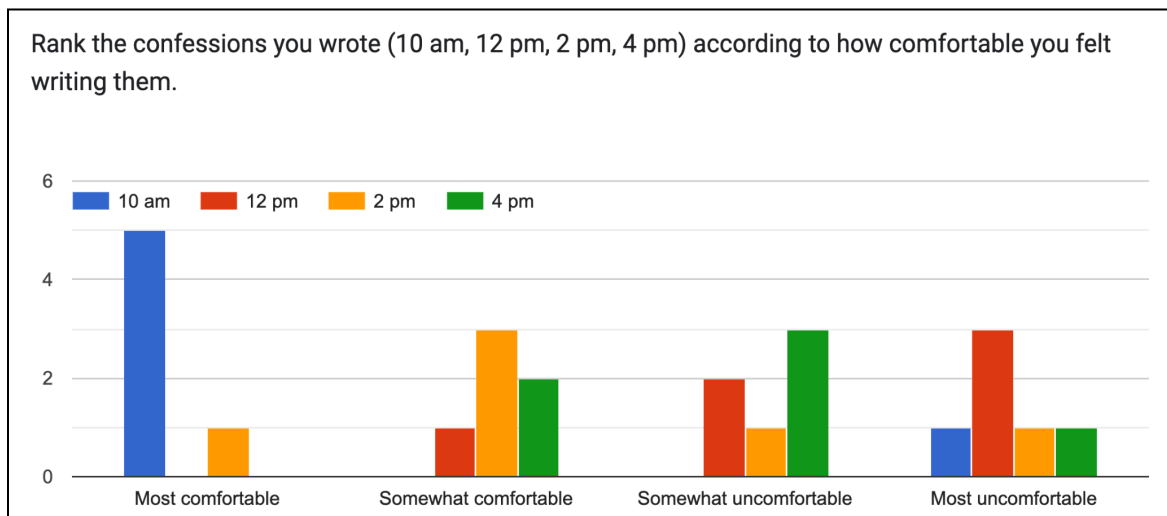
[C] About your responses
1. Think about all the responses you wrote to other participants' confessions. Was a duration of 2 minutes sufficient for you to say what you had intended to say?
2. If you were given more than 2 minutes to write your response, how would you have written your response differently? How different do you think the dynamic of the "conversation" would be?
3. If your identity was not anonymous, how would you have written your responses differently?

Results

Before studying the specific results of the experiment, it may be meaningful to understand the backgrounds of the participants and their usual behavior with regards to online self-disclosure:

● Responses to survey question A-1 revealed that most participants **seek emotional support and practical advice** on AOCPs.
● Responses to survey question B-3 found that participants were most comfortable with self-disclosure when it was about joyful happenings (10am), followed by relationship issues (2pm) and secret thoughts (4pm). They were least comfortable sharing about their mistakes (12pm).

Rank the confessions you wrote (10 am, 12 pm, 2 pm, 4 pm) according to how comfortable you felt writing them.

To measure the amount of discussion within a topic, we use mean word count and character count, i.e. the total number of words/characters divided by the number of posts/responses in that topic. The following table presents the measures for the confessions in each topic:

At	No. of confessions	Topic of discussion	Mean word count	Mean character count
10am	7	Uplifting, joyful happenings	58.72	310.14
12pm	7	Making mistakes	79.72	406.29
2pm	5	Relationship issues	107.2	570.2
4pm	5	Secret thoughts	106.8	561.8

The following table presents a similar analysis for the responses to the confessions in each topic:

At	No. of responses to confessions	Topic of discussion	Mean word count	Mean character count
10am	21	Uplifting, joyful happenings	11.33	61.76
12pm	8	Making mistakes	29	147.125
2pm	6	Relationship issues	51.83	278.5
4pm	9	Secret thoughts	30	158.56

To gain a better understanding of the context of discussion for each topic, I also performed lexicological analysis on the confessions and responses.

Self-disclosure about joyful happenings

The 10am confessions could be categorized into two themes: (1) friendship, and (2) success in working towards a goal. Three confessions discussed either making a new friend or catching up with old friends. Three others discussed success with projects or interviews. One confession discussed a combination of both.

Responses to the 10am confessions followed a similar structure: an approving comment (*"This sounds so nice", "That is so cool", "That's wonderful"*), followed by a matter-of-fact statement (*"It's always the human connections that make our day", "New connections are the best"*).

Self-disclosure about relationship issues

Only five participants wrote confessions for the 2pm prompts. Both confessions and responses to the confessions, however, were the lengthiest of the four topics. The longer responses were accompanied by greater and stronger use of emotional language.

The confessions described a range of situations, speaking about problems with friends, family and romantic partners. The vein that runs through all of them was the emphasis of disparity between their desires (*"I wanna be able to…", "I prefer…"*) and the situations as constructed by their relationships with others.

Given that the prompt asked participants to "ask the community for their advice", responses to the confessions were mostly made of opinions and practical advice (*"Personally, I don't think…", "In my opinion…"*). Many respondents also attached anecdotes to their opinions.

Self-disclosure about secret thoughts

Only five participants responded to the 4pm prompts with confessions, and these confessions were the second longest of the four topics. Given the open-ended nature of the prompt, the confessions did not follow a consistent theme. However, four of the five confessions described a traumatic event or situation experienced by the participants and their feelings of fear and anxiety attached to it. Responses were generally empathetic.

Self-disclosure about making mistakes

The confessions that participants felt the least comfortable writing were in response to the 12pm prompt. Four of the seven confessions discussed the death of a loved one, while two discussed an insecurity. Emotions of guilt and regret were expressed in these confessions, and responses received were sympathetic.

Effect of limited response times

The participants were asked to compare their confessions against similar subreddits (survey question B-7), and they reported that the subreddit posts had a more detailed narrative, possibly due to a lack of response time limit. When asked (B-6) how differently they would have written their confessions without the 5-minute limit, four participants responded that they would have given it more thought, included details and revealed more personal thoughts.

When asked (C-2) how differently they would have written their replies without the 2-minute limit, they stated that they would have spent more time considering their responses before writing it. Three participants expected themselves to offer more insightful words of advice, besides just words of affirmation. Another participant would have felt inclined to be more conversational (rather than a one-off comment). One participant felt that they would have written a similar response anyway.

Effect of anonymity

Participants (B-5) revealed that without a veil of anonymity, they would have chosen to reveal fewer personal details in their confession, been less honest in their confession, or not have written the confession entirely. In particular, they pointed out the 12pm, 2pm and 4pm prompts as being more sensitive in nature. As for their responses to others' confessions (C-3), they said

that they would find it more challenging to express that they have been in a similar situation or that they relate to the confessor's experience.

Discussion

It is within expectation that participants felt more comfortable sharing about joyful topics than serious, deeply personal ones. My experiment found that joyful topics were associated with a smaller amount of discussion, whereas more personal topics (especially ones that solicit advice and opinion) tend to involve a greater degree of discussion.

This short experiment also provides us with a few other interesting observations. Firstly, it can be noted that many of the confessions and responses seem to be inspired by other confessions and responses. This may explain why many of them follow similar structures and themes. Secondly, there seems to be a correlation between the length of an initial confession post and the lengths of the responses to it.

The post-experiment survey also revealed that a limited response time changes not only the presentation of one's confession post, but also the quality of social support received in response to it. The limits compromised the participants' ability and opportunity to include more details and insight in their confessions/responses that they might have otherwise preferred to include. Additionally, the 2-minute limit on replies changed the type of social support they were able to provide to the confessors. With the shorter amount of time, participants elected to provide words of affirmation, rather than words of advice, which they would have felt more confident providing had they been given more time.

This initial finding would seem to suggest that the more asynchronous (less "time-limited") such a conversation is, the better. However, as mentioned by one participant (C-2), this would likely be dependent on the context of discussion. As we have seen in this experiment, affirmations tend to be more well-received for joyful topics, whereas more empathetic and/or sympathetic responses seem to be better appreciated for deeply personal, emotionally intense topics. As such, perhaps the original hypothesis – that reducing conversational asynchronicity **degrades** quality of social support – is not entirely accurate. Instead, it may be more appropriate to posit that reducing conversational asynchronicity leads to **a less desirable manner in which social support is expressed**.

Response time limits on AOCPs are a rather novel mechanism. Outside of AOCPs, time limits can be found in certain social media platforms like BeReal and Instagram Stories. A number of messaging apps (e.g. Snapchat, Telegram) have also implemented "disappearing messages" – messages that disappear after a set amount of time. However, the intended purpose of this feature lies along the lines of privacy, which differs from our experiment.

A more common mechanism that may be regarded as similar to response time limits are character limits, which exist on social media platforms like Twitter. However, they elicit a different behavioral response from users. While character limits challenge a user to express

themselves in abbreviated form, time limits challenge a user to think and articulate a response quickly. In a way, response time limits define a new approach of online user interaction, found within a "gray area" between synchronous, real-time conversation and asynchronous, ad-hoc conversations.

One limitation of this experiment is the use of arbitrary values as time limits. More research should be done to further explore this "gray area of conversation synchronicity" and study how different time limits can affect conversation and user behavior. Future research can also investigate the effects of such time limits on not just benign behavior, but also toxic behavior.

There is also room to investigate other factors that contribute to the online disinhibition effect. Survey questions B-5 and C-3 were preliminary attempts to study the effects of anonymity. I imagine that an innovative setup could similarly study the effects of solipsistic introjection.

References

1. Archer, R. L., & Burleson, J. A. (1980). The effects of timing of self-disclosure on attraction and reciprocity. *Journal of Personality and Social Psychology, 38*(1), 120.

2. Gagnon, T. (2013). The disinhibition of reddit users. *Adele Richardson's Spring.*

3. Grevet, C., & Gilbert, E. (2015, April). Piggyback prototyping: Using existing, large-scale social computing systems to prototype new ones. In *Proceedings of the 33rd Annual ACM Conference on Human Factors in Computing Systems* (pp. 4047-4056).

4. McLaughlin, M. L., & Cody, M. J. (1982). *Awkward silences: Behavioral antecedents and consequences of the conversational lapse. Human communication research, 8*(4), 299-316.

5. Miller, B. (2020). Investigating Reddit self-disclosure and confessions in relation to connectedness, social support, and life satisfaction. *The Journal of Social Media in Society, 9*(1), 39-62.

6. Suler J. (2004). The online disinhibition effect. *Cyberpsychology & behavior : the impact of the Internet, multimedia and virtual reality on behavior and society, 7*(3), 321–326. https://doi.org/10.1089/1094931041291295