

Does the Observation of Synchrony Promote Prosocial Behavior?

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Abstract

This research aims to investigate the relationship between the observation of synchronous movements and prosocial behavior towards an observed group. The sample consisted of 141 participants who were assigned into two conditions: watching a video of synchronous or asynchronous dance performance. Two separate analyses were performed to examine the relationship between synchrony and prosocial behavior and online prosocial behavior. It was hypothesized that participants in the synchrony condition will experience increased prosocial behavior towards the observed group compared to the participants from the asynchrony condition. The hypothesis was partly supported by the results that displayed no significant relationship between prosociality and synchrony but an effect was found between online prosociality and the observation of synchronous movements. These findings may suggest that people are more willing to engage in online prosocial behavior because it is more time-saving and less effortful compared to offline prosocial behavior.

Keywords: observed synchrony, prosocial behavior, social media, dance

Does Observing Synchrony Promote Prosocial Behavior?

Coordination of movements with other people is a typical feature of daily life. Individuals frequently sing, play music, dance, or even move along in a coordinated manner (McNeil, 1995). This synchronization of body movements is shown repeatedly to foster different types of prosocial behavior in the partakers such as helping and cooperation (Cross et al., 2020). Other research also demonstrates that participants who engaged in a synchronous movement task were more willing to donate money to strangers compared to people who moved out of synchrony (Wiltermuth & Heath, 2009). Synchrony is a common feature of social life and day-to-day interactions (Mogan et al., 2017). Nowadays, people mostly connect digitally with others. Statistics show that 45% of teenagers are regularly online and constantly spend time on social networks (Pew Research Center, 2018). Social networks make it possible to bring individuals together from all over the world. Such connections can be done through chatting, uploading or observing photographs, video recordings, etc. For instance, sometimes videos on the internet are based on synchronous interactions between the partakers. Digital media can affect and promote prosocial behavior. It is also shown that social networks can foster an individual's online prosociality that is expressed by forwarding, commenting, or liking different content (Armstrong-Carter & Telzer, 2021). A topic of interest is whether positive social effects can also be transmitted when we are not actively participating but merely observing others synchronize. Therefore, this paper aims to answer the question of what the effect is of observing synchronous movements on prosocial behavior towards the observed group.

There is a huge body of literature that presents evidence that interpersonal synchrony increases prosocial behavior (Cirelli, Einarson, & Trainor, 2014; Kokal et al., 2011; Rennung, & Göritz, 2016). One study has shown that synchrony expands its effects beyond simply how we perceive other individuals but also how we treat those people (Valdesolo & DeSteno,

2011). Individuals perceive similarity from synchronized movements and this, in turn, increases their compassion (Reddish et al., 2014). This increased compassion results in increased prosociality. This suggests that by performing synchronous activities people will engage in prosocial behavior towards co-performers. According to Batson (1998), prosocial behavior can be explained as the willingness to give resources to another individual or group. It is a set of voluntary and unrewarded behaviors towards others and can also be explained as an intention to benefit others for the sake of its goodness (Eisenberg et al., 2006). People who engage in prosocial behavior are inclined to help, assist, comfort, and take care of others.

The above-mentioned assumption can be backed up by the results of a meta-analysis that was done on 35 independent studies (Rennung, & Göritz, 2016). The outcomes show that there was a significant effect of interpersonal synchrony on generalized prosocial behavior. Generalized prosociality is described as the combination of attitudinal and behavioral prosociality. Synchrony or, specifically, synchronous movements are the matching of rhythmic behaviors (Reddish et al., 2014). In other words, it is behavior during which things occur, move, develop and happen at the same time. Results from the meta-analysis revealed that interpersonal synchrony improves both behavioral and attitudinal prosociality (Rennung & Göritz, 2016). Consequently, this implies that generalized prosocial behavior will be increased after engaging in interpersonal synchrony. The generalized prosociality model states that synchrony can activate people's prosocial behavior and make them more prone to help and cooperate with others (Reddish et al., 2014). Therefore, participants who take part in synchronous movements are more likely to behave prosocially compared to people who perform asynchronous movements.

More evidence supporting the relationship between synchrony and prosocial behavior is provided by Valdesolo & DeSteno (2011). In this study, participants were divided into pairs and some of them were told to tap their fingers in synchrony with other participants, and the

rest were told to tap out of synchrony. Results showed that partners who tapped in synchrony displayed more prosocial behavior towards their co-performers compared to partners who moved asynchronously. In a similar study by Cross et al., (2020) participants performed various coordinated movement tasks such as drumming, walking, dancing, and tapping. The findings demonstrated that co-performers were more willing to help each other even after a 24 hours time gap compared to participants whose movements were uncoordinated. This suggests that interpersonal coordination can even have a prolonged effect on prosocial behavior in comparison to uncoordinated interpersonal actions where no such effect can be observed.

Furthermore, prosocial tendencies can also be observed already in the early years of development as a result of synchronous interaction. A series of studies made by Cirelli and colleagues (2014) demonstrated that 14-month-old infants show preferences for engaging in synchronized actions rather than non-synchronized ones. Infants were divided into two conditions. In the first condition, they were bouncing in synchrony with the experimenter and in the other condition, the bouncing was asynchronous. After that, the experimenter would drop objects and the infants would hand them back. Handing back the objects was the measurement of prosocial behavior and it appeared that infants who moved in synchrony with the researcher handed back significantly more dropped objects compared to the infants in the other condition. This event might be explained by the idea that interpersonal synchrony leads to a projection of oneself on others and thus this increases the perception of similarity and boosts empathetic feelings (Overly & Molnar-Szakacs, 2009; Valdesolo & DeSteno, 2011). Results showed that infants who bounced in synchrony with the experimenter helped significantly more than toddlers in the asynchronous movement condition (Cirelli et al., 2017). This demonstrates that even at the beginning of early developmental ages individuals

have preferences for behaving synchronously and that this results in increased prosocial behavior.

Despite the wide range of studies that investigated the effect of interpersonal synchrony on prosocial behavior, some research looked into whether the effects of prosociality can also be transferred to observers. The previously-mentioned model of generalized prosociality suggests that the effect of synchrony should not be restricted just to co-performers but also transfer to observers (Reddish et al., 2014). Research done by Reddish et al. (2014) investigated whether synchronicity also affects observers. They found that participants who observed synchrony were more prone to helping others outside the performance group and were more willing to spend a longer time doing so than participants who observed asynchrony. This article concluded that synchronicity strengthens prosocial behavior towards individuals outside the performers. Follow-up research done on the same topic managed to replicate these findings (Reddish et al., 2016). The study demonstrated that participants who observed synchronous interaction were more inclined to help an anonymous person compared to participants who were not observers of synchrony. The researchers stated that the effects of prosociality extend further from the performance group to individuals outside of it. This suggests that the observation of synchronous movements will elicit an increased effect of prosociality on non-performers of the synchronous action compared to the observation of asynchrony. These studies provide support for the idea that prosocial behavior could extend beyond the performers and transfer also to observers. In these papers, the prosocial behavior of the observers was measured by their generalized prosociality that was directed towards individuals outside the performance group. The difference in the current research is that it looks into the effect of prosocial behavior towards the observed group.

In line with the assumption that the observation of synchrony is positively related to prosocial behavior, it could also be expected that people who are exposed to synchrony on the

internet will also show increased prosociality compared to people who are not. Caprara and colleagues (2005) distinguish between four different components of prosocial behavior. These are mainly sharing, helping, taking care of, and empathy for others. These types of behaviors can also be witnessed on social media. For instance, on YouTube, Instagram, or Tik-Tok people can observe videos of dancers who move in synchrony following the latest dancing trends. Observing these actions could give rise to the expression of different emotions such as empathy, willingness to help, or desire to share the content with others on social networks. According to Armstrong-Carter & Telzer (2021), engaging in actions such as commenting, reposting, liking, and following-up content can be seen as acts of prosociality. Therefore, this suggests that individuals who like, comment, or share content on social media could behave more prosocially as a result of the observation of synchrony compared to people who have not been observers of synchronous interactions.

This research aims to investigate whether observing synchrony will result in more prosocial behavior towards the observed group compared to participants who observed asynchrony. Previous findings suggest that participants who are performers or observers of synchrony are more willing to engage in prosocial behavior compared to individuals who are performers or observers of asynchrony. The current research is conducted in an online setting and as mentioned before prosocial behavior can also be observed in the online environment and more specifically on social media. Therefore, this research will investigate separately the aspect of online prosocial behavior. This investigation is essential and novel since the current COVID-19 situation gave rise to more web-based interactions. Based on all the above-mentioned literature and argumentations it is expected that people who are passive observers of synchronous movements will experience more prosocial behavior towards an observed group compared to observers of asynchrony. The participants were recruited through convenience sampling and were asked to take part in an online survey. The effect of

observing synchrony on prosocial behavior was measured by showing manipulated videos of either a synchronous or asynchronous dance performance.

Methods

Exclusion Criteria

Prior to conducting our statistical analysis, 96 of our 237 respondents were removed from the data set. Firstly, we removed respondents who were under the age of 16 (1), respondents who found the video offensive, disturbing or inappropriate (22) and respondents who did not agree to their data being used (6). Secondly, based upon technical criteria, respondents who had difficulties with their audio or video were excluded (28). Thirdly, based upon respondents' perceptions of our conditions, respondents who did not perceive the synchrony, or asynchrony, corresponding to their condition were excluded (30). This exclusion was based on the participant's answer on the scale about how much they agree that the dancers moved in synchrony. Lastly, based upon manner of completion, respondents who did not follow our clear instruction to fill in "strongly disagree" on prosocial question 6 were assumed to be not keeping attention and were excluded (23). There were 15 respondents who were further excluded for not completing the questionnaire, 9 of whom quit before they had viewed the video and 6 after viewing. These 6 participants who viewed the video but did not complete the questionnaire were removed because we did not have information about whether they had good video or audio and whether they filled the questionnaire in seriously.

Participants

Our sample consisted of 109 females and 32 males, age range 17-31 ($M_{age} = 21.22$, $SD_{age} = 2.84$). The ratio between women and men (3.41) was comparable between both conditions. The mean age of our sample was (21.22) with a standard deviation of (2.84). Our youngest participant was 17, and the oldest 31. Our sample was diverse in terms of nationality, with the most frequent nationalities being: Dutch, German and Bulgarian which together accounted for

roughly 60% of our sample. Participants were randomly assigned to one of two conditions: asynchronous condition ($n=83$) and synchronous condition ($n=58$).

Materials and Procedure

After having obtained ethical approval from the Ethical Committee of the University of Groningen, the researchers obtained participants through social media advertisements, personal networking and SONA. SONA is a credit based system that rewards students with study credits for participation in psychological research; our participants received 0.5 SONA credits for their participation. The survey was conducted online via Qualtrics (Qualtrics, Provo, UT). Participants were informed about their rights and asked for their consent before being introduced to the study with a welcome text. They were then asked to indicate their nationality, age, and gender. The full questionnaire is available within the appendix.

Before being presented with the manipulation of the independent variable synchrony, participants were assessed on two moderator variables¹. When having completed these pre-measures, participants were randomly assigned to watch a video of either a synchronous, or an asynchronous dance performance (see Figure 1 for examples). The dance type which was observed by the participants is called hip-hop. The videos in both conditions showed a dance group consisting of the same five dancers, in the same setting, with the same music, and same clothes. Both videos were 59 seconds long, participants were asked to watch it only once and without paying attention to anything in particular.



¹ The moderator variables personality traits measured by the Ten Item Personality Measure (TIPI; Gosling, Rentfrow & Swann, 2003) and cultural orientation measured by the individualism/collectivism scale (Kim & Cho, 2011) are not relevant to this research and therefore they will not be discussed.

Fig. 1. Depicts representative screenshots from the video in asynchrony condition (left) and synchrony condition (right).

After watching the assigned video, participants were presented with items concerning their affect, belonging, prosocial behavior towards the dancers, and liking of the dancers².

Prosocial behavior was measured with a scale created by Caprara et al., (2005). It assesses four types of prosocial behavior: sharing, helping, taking care of, and empathy. In the original scale there are four items per each construct. In this research the measurement scale was reduced to eight items (two items per construct) and the statements were revised to be context specific. For example, “I am willing to donate money to this dance crew” measured helping; “I feel happy when I see the dance crew enjoying themselves” assessed empathy; “I would spend time with one of the dancers if he/she feels lonely” measured the construct of taking care of someone, and “I would easily lend money to one of the dancers if they ask me to.” measured sharing. Participants rated these items on a five-point Likert scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). The reliability of the revised prosociality scale was high (Cronbach’s $\alpha = .81$) which suggests that the scale had good internal consistency. The measurement scale also included an attention check (item 6) that asked participants to answer this item with the answer “strongly disagree”.

Afterwards, a couple of questions regarding participant’s willingness to use social media to promote the content (the video of the dance crew) were introduced. These questions were related to their intention to engage in online behaviors such as commenting, re-posting, liking, or bookmarking the video of the dance crew. An example is “If I see the video on social media I would repost it”. The single test reliability analysis suggested that the internal consistency of the measurement scale of social media was high (Cronbach’s $\alpha = .85$). Next,

² The variable affect was measured by the positive and negative affect schedule (PANAS, Watson et al., 1988), belongingness was measured by the Need Threat Scale (Van Beest & Williams, 2006), and liking by a scale of Rubin (1970) with a single item constructed by Wilthermuth (2012). These variables are not relevant to the current research therefore they are not further discussed. The full survey can be found in the Appendix.

because some of the dance moves could have been perceived as offensive or disturbing by some of the individuals a few statements followed to assess whether someone felt disturbed by the video. These questions were included to make sure to not obscure any effect because participants were offended. For instance, “I felt disturbed by the video” is an example of such item. Subsequently, a manipulation check was presented to measure whether some of the participants did not perceive the video correctly and therefore to be excluded from the final analysis of the results. This was measured by asking the participants whether the dance crew moved in synchrony which they could answer with “yes”, “no” or “I don’t know”. To assess this further they were requested to indicate how much they agree with the following statement: “The dancers in the video moved in synchrony”. They rated this question on a seven-point Likert scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). There were also questions to check whether the participant’s managed to watch the whole video and if they watched it with sound. In the end, there was an additional opportunity for participants to write comments and give feedback about the study. And lastly, people were debriefed about the true purpose of the research and were asked to not discuss this information with other prospective participants.

Results

To investigate the relationship between observing synchronous versus asynchronous movements and levels of prosociality an independent sample t-test was conducted. The analysis began with the examination of the assumptions related to independence, normality, and homoscedasticity. All assumptions were met. A single outlier in the asynchronous condition was observed in the displayed boxplots and a follow-up analysis without it was performed to inspect whether this had a significant impact on the results. No remarkable

changes in the outcomes were detected. Therefore, the outlier was not removed from the data. The descriptive statistics for prosocial behavior per condition are shown in Table 1.

The hypothesis stated that people who are passive observers of synchronous movements will experience more prosocial behavior towards a targeted group compared to observers of the asynchronous movements. It was expected that participants in the synchrony condition will score higher on the prosociality scale compared to individuals in the asynchrony condition. Results from the independent samples t-test fail to find support for the hypothesis, $t(139) = -1.24, p = .108$, Cohen's $d = -0.21$. The results suggested that there is no significant relationship between the observation of synchrony and more engagement in prosocial behavior compared to the asynchrony condition.

Next, an independent sample t-test was performed to test whether observing synchronous versus asynchronous movements affected online prosocial behavior. All the assumptions were met except the normality assumption. The distribution plot showed a substantial positive skewness for both conditions. In such cases, Tabachnick and Fidell (2007) and Howell (2007) suggest a transformation of the variable to a new logarithmic one (Log 10). After the transformation of the online prosocial behavior variable, the assumptions were checked and again a slight violation of the normality assumption was detected but this time it appeared only in the asynchronous condition. Since this is a minor violation the independent sample t-test was continued regardless of it. The descriptive statistics for the untransformed online prosocial behavior variable per condition can be found in Table 1. The boxplots revealed a single outlier in the asynchrony condition but as in the previous analysis, the removal of it did not result in any notable changes therefore it was left in the data set.

The effect of the dependent variable social media was evaluated based on its relationship with the independent variable the synchrony versus asynchrony condition. With the transformed social media variable an independent sample t-test was conducted to test the

same hypothesis as in the previous analysis. In line with the hypothesis, participants in the synchrony condition were more willing to engage in online prosocial behavior compared to individuals in the asynchronous condition, $t(139) = -2.36, p = .01$, Cohen's $d = -0.04$. These findings demonstrated that participants who watched dancers perform in the synchrony condition were more inclined to engage in online prosocial behavior in comparison to the participants in the asynchrony condition.

Table 1

Descriptive statistics

Variable	Synchrony <i>M (SD)</i>	Asynchrony <i>M (SD)</i>
Prosocial Behavior	3.81 (0.97)	3.62 (0.86)
Online Prosocial Behavior	2.84 (1.00)	2.36 (1.01)

Note. All displayed statistics are untransformed.

Discussion

The current research aims to investigate whether the observation of synchronous movements will result in more prosocial behavior towards an observed group compared to participants who observed asynchronous movements. This study investigated separately the effect of observing synchrony on offline and online prosocial behavior. The findings provided partial evidence in support of this relationship. The current results showed that there is a significant effect only between online prosocial behavior and the observation of synchrony. This suggests that as a consequence of the observed synchronous dance performance participants were more likely to engage in prosocial behavior when it is executed in the online environment. Since the current research was completely carried out in an online setting this might be a suitable explanation of the observed effect. As previously discussed, online prosocial behavior is expressed through actions such as commenting, liking, sharing, or re-

posting content on the internet (Armstrong-Carter & Telzer, 2021). These types of behaviors are less time-consuming and less effortful compared to offline prosocial behaviors. Online prosociality might be more relevant in this case compared to offline prosocial behavior because measuring offline behavior in an online setting might not be very appropriate. Perhaps if the participants observed the dance performance live, they would have been more willing to engage in actual prosocial behavior that requires time and effort such as donating money or spending time with the dance crew. People who engage in online prosocial behavior can easily and effortlessly provide support to other individuals just with a single mouse click. Therefore, this might explain why participants were more willing to behave prosocially only online but not in offline settings. The results further provided evidence that the participants who were assigned to the synchrony condition displayed more online prosocial behavior compared to participants from the asynchrony condition. This suggests that the observation of the online synchrony dance performance contributed to the participant's engagement in online prosocial behavior.

According to Armstrong-Carter & Telzer (2021), people who have access to social media and spend more time online may have better opportunities to behave prosocially compared to people who do not have access to social platforms. The ongoing COVID-19 situation has considerably decreased the opportunities for people to help and benefit others because of various health-related measures (Armstrong-Carter & Telzer, 2021). Measures such as social distancing resulted in increased activity on online platforms. This might be a probable explanation of why people would prefer to behave prosocially more online than offline. Digital access increases globally and produces more opportunities for helping and supporting behavior at home. For instance, people could take part in online helping communities or can easily follow links to donate money or sign petitions. This means that people have the opportunity to provide empathy and support to other individuals even without

being physically present. Social media can be used to influence prosocial behavior by providing a unique platform where people can contribute daily to the lives of other individuals all over the world.

As previously discussed, observing synchrony leads to more prosocial behavior compared to the observation of asynchrony (Reddish et al., 2016). It might be the case that observing synchrony could give rise to different positive social benefits such as providing support or empathy to someone. The current research provided evidence for this relationship by showing a significant effect of the relationship between observing synchrony and online prosocial behavior. These findings combined with the assumption that online prosociality may result in public recognition for the behavior can give further clarification for the positive relation. Armstrong-Carter & Telzer (2021) suggest that prosociality is more permanently recorded in social media than in person. This proposes that people will deliberately pursue this type of prosocial behavior. This will mostly be the case for individuals who are status and attention seekers (Choi & Seo, 2017). A study conducted with young adults showed that they were more willing to engage in online prosocial behavior when they were led to believe that their prosocial actions will be publicly documented on social media compared to when no such statement was made (Nesi et al., 2018). This can be implicated in the future by creating videos of synchronous interactions and asking people to contribute to a certain cause by assuring them that their support will be publicly shared. For instance, a video of synchronous performance can be uploaded to social media, and attached to it people can find a link to a fundraiser.

Limitations and Future Directions

Some possible limitations to the study need to be specified. First of all, the measurement scale created by Caprara et al., (2005) was designed to measure trait prosociality while in this research the focus was on state prosociality. Therefore, this measurement scale

might not be applicable in this context even after the revision of items that intended to make them more context-specific. The items were changed in such a way that the prosocial behavior would be directed towards the observed dance crew but the questions were still assessing trait prosociality instead of state prosociality. Future research can benefit from the design of a new measurement scale that will assess state prosocial behavior.

A second limitation of the current study is that the measurement of offline prosocial behavior might not have been suitable for this research design. The research was completely carried out in the online environment and therefore it might not be applicable to test offline prosocial behavior in an online setting. According to the current findings, the online measure did work well for the assessment of the relationship between observing synchrony and online prosocial behavior. It would be interesting for future research to test whether the current effect of observing synchrony online and online prosocial behavior can be replicated in real-life settings. This will shed light on the question of whether an in-person environment can contribute to the engagement in prosocial behavior after the observation of synchronous actions.

Conclusion

The current research demonstrated that synchrony can positively influence the expression of prosocial behavior. Although, the results found no evidence for the relationship between the observation of synchrony and offline prosocial behavior, a significant effect was demonstrated for online prosocial behavior. This indicates that people show preferences for synchronized behaviors and that the observation of such behaviors has an impact on their willingness to behave prosocially in online settings. The current finding extends previous research that has been conducted to investigate the relationship between synchrony and its positive social consequences (e.g., affiliation, rapport, and cooperation). Moreover, this research is novel and can serve as a ground work for future investigations into the social

benefits of observing synchrony in online settings. Synchronized behaviors have always been part of people's everyday life. They can be used and implicated in the online environment in order to produce more positive social interactions among people.

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Appendix A

Greeting

Welcome to our study! Before we introduce you to the topic, you will read some general information about participation. Please read it carefully and ask all questions you might have.

Information form

INFORMATION ABOUT THE RESEARCH Feel Like Dancing

Why do I receive this information?

You have been invited because we are interested to research how people respond to observing dance. You have been invited through social media via the researchers' personal networks and/or because you are a student at the University of Groningen.

This research is conducted as part of the bachelor thesis by M.N. Genova (student), H.N. Graul (student), O.M. Rofifah (student), T. Simkins (student), E. Tsvetanova (student), and A. van Mourik Broekman (principal investigator, a.van.mourik.broekman@rug.nl).

Do I have to participate in this research?

Participation in the research is voluntary. However, your consent is needed. Therefore, please read this information carefully. Ask all the questions you might have (to a.van.mourik.broekman@rug.nl), for example if you do not understand something. Only afterwards you decide if you want to participate.

If you decide not to participate, you do not need to explain why, and there will be no negative consequences for you. You have the right to withdraw your participation at all times, including after you have consented to participate in the research.

Why this research?

In this research we are interested in how you feel after watching a short dance performance.

What do we ask of you during the research?

Before the research starts, we will ask for your consent to participate.

Then we will ask you some questions about you and your personality by asking you to indicate to what extent you agree or disagree with certain statements. Following this, you will watch a short clip of a dance performance. Finally, we will ask you some questions about what you thought about the performance and how you feel by asking you to indicate to what extent you agree or disagree with certain statements.

This research will take approximately 10-15 minutes to finish.

What are the consequences of participation?

Your participation is entirely voluntary; therefore, no compensation is provided. Your participation is highly appreciated and will help us understand what the social impact is of watching performing art and physical movement.

The dance performance shown in this research does not contain nudity or offensive gestures. However, some of the movements may be considered somewhat explicit. Although we do not expect that this will have negative consequences for most participants, we advise you not to participate if you are sensitive to and/or could be offended by such content.

You may also terminate your participation at any time during the research without any

consequences.

How will we treat your data?

You will be asked to provide personal data such as age, gender and nationality. The data collected in this research will be used for educational purposes (i.e., a bachelor thesis).

Data will be collected anonymously and will not be traced back to you as an individual. The personal data collected will be age, gender, and nationality. Data on age and nationality will be stored separately from the other data after data collection is completed.

Data will be handled (collected, prepared, analyzed) by the aforementioned researchers. All data will be stored for 10 years. Because data is collected anonymously, we cannot access, rectify or erase individual data after participation.

What else do you need to know?

You may always ask questions about the research: now, during the research, and after the end of the research. You can do so by emailing the principal investigator (a.van.mourik.broekman@rug.nl).

Do you have questions/concerns about your rights as a research participant or about the conduct of the research? You may also contact the Ethics Committee of the Faculty of Behavioural and Social Sciences of the University of Groningen: ec-bss@rug.nl.

Do you have questions or concerns regarding the handling of your personal data? You may also contact the University of Groningen Data Protection Officer: privacy@rug.nl.

As a research participant, you have the right to a copy of this research information.

informed consent

INFORMED CONSENT

Feel Like Dancing

- I have read the information about the research. I have had enough opportunity to ask questions about it.
- I understand what the research is about, what is being asked of me, which consequences participation can have, how my data will be handled, and what my rights as a participant are.
- I understand that participation in the research is voluntary. I myself choose to participate. I can stop participating at any moment. If I stop, I do not need to explain why. Stopping will have no negative consequences for me.

Consent to participate in the research:

Yes, I read the research information and consent to participate; this consent is valid until 01-06-2022

If you do not consent or want to withdraw you can quit the questionnaire now without any consequences.

Welcoming Text

Welcome and thank you for taking part in our study!

We would like to ask you to first answer a few questions or to evaluate a few statements, so we can get to know you. Then, you will see a video of a dance performance and you will be asked to answer questions about what you have seen.

It is very important that you read the questions thoroughly, to ensure that you understand what is asked of you. However, there is no right or wrong answer. Please answer as

enthusiastic.

I see myself as critical, quarrelsome.

I see myself as dependable, self-disciplined.

I see myself as anxious, easily upset.

I see myself as open to new experiences, complex.

	Strongly disagree	Moderately disagree	Disagree a little	Neither agree nor disagree	Agree a little	Moderately agree	Strongly agree
I see myself as reserved, quiet.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I see myself as sympathetic, warm.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I see myself as disorganized, careless.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I see myself as calm, emotionally stable.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I see myself as conventional, uncreative.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

I/C

In the next paragraph you will read several statements about how people relate to each other. Each question will include two opposite statements. Please read the statements

carefully and indicate which statement you agree more with, and how strongly you agree with it. A higher negative number means you agree more strongly with the statement on the left side, a higher positive number means you agree more strongly with the statement on the right side.

If you are answering this questionnaire on the phone, you might have to put it in landscape/horizontal screen mode to see all of the text.

	-3	-2	-1	0	+1	+2	+3	
People are defined based on the attributes of the individual.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	People are defined based on the attributes of engaged social groups.
People are independent of social groups.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	People are defined by social groups.
Individuals and groups can be separated.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Individuals and groups cannot be separated.
Individual goals are more important.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Group goals are more important.
Individual's behaviors should follow individual goals.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Individual's behaviors should follow group goals.
To achieve group goals, individual interests cannot be sacrificed.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	To achieve group goals, individual interests can be sacrificed.
For group members, individual rights are more important.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	For group members, individual responsibilities are more important.
At work or at play, it is important to win.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	At work or at play, it is important to harmonize.
The source of group success is competition.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	The source of group success is cooperation.
Groups are better with competition.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Groups are better with harmony.
People should follow free-will.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	People should follow group norms and practices.
When you disagree with others, follow your opinion.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	When you disagree with others, follow group decisions.

Within groups,
individuality is respected.



Within groups, group
uniformity is respected.

Video sync

Please watch the following video. You do not have to pay attention to anything in particular, just sit back and enjoy.

If you are on the phone, please make sure to use landscape/horizontal screen mode to see the whole video.

The audio of the video is turned high, so if you are wearing headphones, make sure to turn the audio down a little.

Please make sure your audio is on and please only watch the video once, afterwards press the red button below the video to proceed with the survey.



00:59 |



Video async

Please watch the following video. You do not have to pay attention to anything in particular, just sit back and enjoy.

If you are on the phone, please make sure to use landscape/horizontal screen mode to see the whole video. The audio of the video is turned high, so if you are wearing

headphones, make sure to turn the audio down a little.

Please make sure your audio is on and please only watch the video once, afterwards press the red button below the video to proceed with the survey.



Affect

Indicate to what extent you feel the following:

	Not at all	A little	Moderately	Quite a bit	Extremely
Interested	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Distressed	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Excited	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Upset	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Strong	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Guilty	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Scared	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Hostile	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Enthusiastic	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Proud	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Irritable	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Alert	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ashamed	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Inspired	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Nervous	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Determined	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Attentive	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Jittery	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Active	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Afraid	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Belonging

The following statements are concerned with the dance crew you just saw in the video.
How strongly do you agree or disagree with the following statements?

	Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree
When watching							

I would immediately help one of the dancers if they are in need.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel happy when I see the dance crew enjoying themselves.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I would easily lend money to one of the dancers if they ask me to.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
For this particular statement please select the answer "Strongly disagree".	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I would share something personal with the dance crew.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I would spend time with one of the dancers if he/she feels lonely.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
If one of the dancers is in need, I would take care of him/her.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Liking

The following statements are concerned with the dance crew you just saw in the video. How strongly do you agree or disagree with the following statements?

Neither

media I would give it a "like".	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
If I see the video on social media I would re-post it.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
If I see the video on social media I would leave a positive comment.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
If I see the video on social media I would share it with friends.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
If I see the video on social media I would bookmark/save it.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

offense

Following you will find a few questions concerning your attitude towards the video. For every statement give an indication of how strongly you agree or disagree.

	Strongly disagree	Disagree	Slightly disagree	Neutral	Slightly agree	Agree	Strongly agree
I felt offended by the video.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I felt disturbed by the video.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I found the video inappropriate.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Manipulation check

Did you answer the questions genuinely? If you did not, or you see any other reason why we shouldn't be using your data, please select 'Do not use my data'. There will be no consequences for that, it just helps us with the validity of our data.

- You can use my data
- Do not use my data

Further Questions

Do you have any further comments?

Debriefing

Thank you for participating in our research.

In this research we were interested to investigate the social impact of observing a dance performance (how connected you feel with the dancers, whether you like them, and whether you support them). What you did not know is that, you either saw the dancers move in synchrony or not. We want to find out whether people respond differently depending on how the dancers coordinate their movement. Furthermore, we will investigate whether this is affected by your personality as well as whether you are more or less individualistic versus collectivistic.

Please do not talk about the true purpose of the study to people who are still going to participate.

If you have any questions about this research, please contact the principal investigator (a.van.mourik.broekman@rug.nl).

Credit

As researchers we would also like to say a big thank you to the Wrong Generation Crew for performing for the videos you watched earlier.

The Wrong Generation Crew is a dance crew from Sofia, Bulgaria. If you would like to check them out or support them, you can visit their Instagram channel

@wronggenerationofficial; or copy this link:

<https://www.instagram.com/wronggenerationofficial/>

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