

**The Influence of Observing Synchronous Movement on Feelings of Group Belongingness:
The Role Of the Big-Five Personality Dimensions.**

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Abstract

In the current study we aimed to investigate the hypothesised positive effect of observing synchronous movement and feelings of belonging. Additionally, we investigated the moderating effect of the big-five personality traits, extraversion and neuroticism in particular, on this relationship. We predicted that trait extraversion would strengthen the relationship between observing synchronous movement and belonging, and that trait neuroticism would weaken the relationship between observing synchronous movement and belonging. To test these hypotheses we conducted an online experiment ($N = 141$) with participants randomly assigned to two conditions: one in which they observed a video of dancers performing in synchrony, and one in which they performed in asynchrony. Our results failed to confirm our hypotheses. A post-hoc analysis demonstrated a moderating effect of neuroticism on the relationship between observing synchronous movement and belonging. In light of these findings, we discussed new approaches which could be advantageous for further investigation into these hypotheses.

Keywords: observing dance, synchronous movement, belonging, big-five personality dimensions

The Influence of Observing Synchronous Movement on Feelings of Group Belongingness: The Role Of the Big-Five Personality Dimensions.

Introduction

From a traditional Russian ballet to the latest Korean pop-music video, from the Olympic opening ceremony to the artistic swimming competition. It appears synchronous movement is, and always has been, all around us. This synchronous movement is also often ritualised within cultural practices to elicit a wide range of psychological states both within groups and observers (Fischer et al, 2013). During a military parade for example, one may feel threatened to see soldiers marching in synchrony; but synchronous movement during a dance performance on the other hand, evokes a sense of belonging with the performers (Van Mourik Broekman et al., 2018). In the present study, dance performance will be our source of synchronous movement. Furthermore, studies have shown a relationship between big-five personality traits, particularly extraversion (positively associated) and neuroticism (negatively associated), and an individual's feelings of belonging (Derrick, Keefer & Troisi, 2019; Malone, Pillow & Osman, 2012; Wilson, Harris & Vazire, 2015). However, as of writing, there is little research into the effects of these traits on an individual's response to observing synchronous movement. This paper will thus address the question: what is the effect of observing synchronous movement on feelings of belonging, and is this relationship moderated by personality traits extraversion and neuroticism?

In the current study we will be focusing on feelings of belonging within observers in relation to an observed group. In studies which measure belonging we often see questions for participants such as: "I felt connected with..." and "I had a feeling that I belonged to..." (Van Beest & Williams, 2006). The conceptualisation of belonging here is therefore one as an immediate state in relation to a specific presented dance group, football team, nationality etc.

This conceptualisation is also used in the literature concerning synchronous movement and belonging, in relation to the group (Van Mourik Broekman et al., 2018). The current study will follow this trend.

In the big-five model we see a strong positive relationship between extraversion, and a strong negative relationship between neuroticism, and belonging (Derrick, Keefer & Troisi, 2019; Malone, Pillow & Osman, 2012; Wilson, Harris & Vazire, 2015). This makes sense when we consider what these traits actually indicate. Extraversion is positively associated with belonging and friendship satisfaction (Malone, Pillow & Osman, 2012; Wilson, Harris & Vazire, 2015). Individuals high in extraversion are energetic, enthusiastic and outgoing, in other words: extraversion can be characterised as a positive emotion dimension (McNulty, 2000). These individuals are therefore more likely to seek out positive social opportunities and interactions than those lower in this trait, and thus build concrete social networks (Asendorpf & Wilpers, 1998; Selfhout et al., 2010). Neuroticism on the other hand is negatively associated with belonging (Donnellan et al., 2008). Individuals high in neuroticism are sensitive, nervous and unstable. Neuroticism can thus be characterised as the negative emotion dimension (McNulty, 2000). Individuals high in neuroticism are more likely to see threat in everyday, social interactions, and feel unstable within their social context (Donnellan et al., 2008). This literature provides evidence that extraversion and neuroticism are related to one's feelings of belonging towards groups with which they interact. In the current study, we will investigate if these relationships also apply to groups which an individual observes, in this case: a dance group.

New insights into these relationships have further been offered by research into social surrogacy: the replacement of genuine, social relations with those found in media, such as books, television or the internet (Derrick, Keefer & Troisi, 2019). Derrick, Keefer & Troisi (2019) found

that the higher an individual was in extraversion, and the lower they were in neuroticism, the less frequently they engaged in social surrogation. This research thus suggests that extraversion and neuroticism's relationship with belonging also applies to the observation of media, rather than being solely restricted to real-life social networks. Furthermore, the fact that individuals high in extraversion and low in neuroticism need to consult these media less frequently in order to feel the same sense of belonging implies that these individuals could be more receptive to these media, than those lower in these traits. That is to say: extraversion strengthens the relationship between observing and belonging, and neuroticism weakens the relationship between observing and belonging.

A recent study conducted by Yano, Kase & Oishi (2021) provides more direct evidence for this interaction effect. They studied the relationship between the big-five personality traits and aesthetic sensitivity. Aesthetic sensitivity is a component of general sensory processing sensitivity which is characterised by a greater awareness of subtle stimuli and larger emotional reactivity to this stimuli; stimuli such as synchronous movement during a dance performance. As a result of this study, they found a strong correlation between extraversion and aesthetic sensitivity. That is to say: individuals high in extraversion were more sensitive to subtleties in the presented stimuli and reacted with greater emotionality than those lower in this trait. Yano, Kase & Oishi (2021) additionally found a weak, negative correlation between neuroticism and aesthetic sensitivity: individuals high in neuroticism were slightly less sensitive and emotionally responsive to aesthetic stimuli than those lower in this trait. In the current study, we therefore expect to see these findings reflected in a stronger effect of synchronous movement on belonging, when individuals are high in extraversion and low in neuroticism.

It is also pertinent to consider the relationship between dance, synchronous movement and belonging. When we look at the relationship between one's participation in dance and feelings of belonging, during dance classes and interventions, we see a positive relationship throughout the literature (Chappell et al., 2021). But our study will focus on observation, not participation. Van Mourik Broekman et al. (2015) state that feelings of belonging, or more broadly "solidarity", experienced among performers have the potential to transfer to observers. Therefore, regardless of position, as either performer or observer, one has the ability to feel a sense of belonging towards the dance group (Van Mourik Broekman et al., 2018, 2019). Furthermore, this sense of belonging can be maximised when performers move synchronously, as opposed to asynchronously (Fischer et al, 2013; Kreutzmann et al., 2018; Van Mourik Broekman et al., 2018). This research demonstrates that observing performance has a positive effect on feelings of belonging; even more so when observing synchronous movement as opposed to asynchronous movement. In the current study, we hope to confirm these findings and complement them with the addition of extraversion and neuroticism as potential moderators.

In summation, personality research highlights the positive relationship between extraversion and belonging and the negative relationship between neuroticism and belonging. Social surrogacy and aesthetic sensitivity research suggest that the relationship between observation and feelings of belonging will be effected by extraversion and neuroticism; providing an indication of an interaction effect. Research into dance and synchronous movement demonstrates a relationship between observing synchronous movement and belonging, yet it is not known whether extraversion and neuroticism can moderate this relationship.

In the current study we expect to see a positive effect of observing synchronous movement on belonging, in comparison with observing asynchronous movement. Furthermore,

we expect to find a moderating effect of extraversion and neuroticism on this relationship; extraversion is expected to strengthen the relationship, and neuroticism is expected to weaken the relationship. We will be investigating these hypotheses with an online study in which participants will be randomly assigned to two conditions: one in which they will observe a video of dancers performing in synchrony, and one in which the dancers will perform in asynchrony. Before watching the video they will be asked a series of questions regarding the big-five personality traits, and afterwards they will be asked a series of questions regarding belonging.

Methods

Exclusion Criteria

Prior to conducting our statistical analysis, 96 of our 237 respondents were removed from the data set. Firstly, we removed respondents based upon ethical criteria: respondents under the age of 16 (1) and respondents who did not agree to their data being used (0). Then, we removed respondents who found the video offensive, disturbing or inappropriate (12), these respondents answered above neutral on any one of these questions (see Appendix). Participants who had difficulties with their audio or video (16) were also removed. Respondents who did not perceive the synchrony, or asynchrony, corresponding to their condition as rated on our Likert scale (see Appendix), were excluded (28 from the synchrony condition, 2 from the asynchrony condition). We defined this as answering neutral (“Neither agree nor disagree”), or in the opposite direction of their condition. Lastly, respondents who failed our attention check (see prosocial question 6 in Appendix) were assumed to be not be paying attention and were excluded (22). Respondents (15) were further excluded for not completing the questionnaire and thus providing missing data; 9 of whom quit before they had viewed the video, and 6 after viewing.

Participants

Our sample consisted of 109 females and 32 males, with a mean age of 22.1 ($M = 22.1$, $SD = 6.0$). The 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 participants. Participants were randomly assigned to one of two conditions: asynchrony condition ($n = 83$) or synchrony 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' personality was assessed using the big-five model.¹ For this we used the Ten Item Personality Measure (TIPI; Gosling, Rentfrow & Swann, 2003); which they found to have a comparable reliability to more extensive scales such as the BFI. This scale was developed to be a brief measure of the big five personality traits and is suitable for use in questionnaires containing multiple other measures. It consists of ten items, each a pair of personality characteristics such as: "Sympathetic, warm" and "Anxious, easily upset". The participant is required to rate the

¹ We also recorded individualism/collectivism as measured using the individualism/collectivism scale from Kim & Cho (2011). This was not relevant to the current study and so has been omitted from our methods.

extent to which the pair as a whole applies to them on a seven-point Likert scale from “strongly disagree” to “strongly agree”. We applied this scale according to the instructions provided by Gosling, Rentfrow & Swann (2003). We also checked our participants’ mean scores against the provided norms. These were comparable, apart from conscientiousness for which our sample scored slightly higher than the norm. Measures of internal consistency were not calculated as these are unreliable indicators of reliability for scales such as the TIPI; where each question regarding a trait is designed to measure a different and/or opposing characteristic of this trait (Gosling, Rentfrow & Swann, 2003).

Upon completion of these pre-measures, participants were randomly assigned to watch a video of either a synchronous, or asynchronous hip-hop style dance performance (see Figure 1 and 2). 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 and participants were asked to watch it only once and without paying attention to anything in particular. After watching the assigned video, participants were presented with items concerning their feelings of belonging towards the dancers.²

Figure 1

² Liking (Rubin, 1970; Wiltermuth, 2012), affect (Watson, Clark & Tellegen, 1988), and prosocial/online prosocial behaviour (Caprara et al., 2005) were also measured after our manipulation, but these were irrelevant to the current study and have therefore been omitted.

Synchrony condition

Figure 2

Asynchrony condition

Belongingness to the dance group was measured, using adapted items from the Need Threat Scale (Van Beest & Williams, 2006), which was designed with excellent reliability. This scale includes five statements used to measure the concept of belonging, which were slightly adapted to fit the context of this study. Participants were asked to indicate how strongly they agreed or disagreed with the statements on a seven-point Likert scale, ranging from ‘strongly disagree’ to ‘strongly agree’. Examples of adapted statements include: “I had a feeling that I

belonged to the dance crew when watching the video” and “I felt like an outsider while watching the video” (Cronbach’s $\alpha = .71$). The mean belonging scale was constructed by calculating the mean of the participants’ scores across our 5 belonging questions.

Next, we wanted to check whether participants found the performances offensive or disturbing; we provided participants with questions to assess this. These questions were included so that we could exclude participants who had negative reactions to the videos, as these reactions would confound our results. Subsequently, participants were provided with two manipulation checks which measured observed synchrony in response to the presented videos. The first check asked whether the participant observed synchrony with the possible answers: “yes”, “no”, “I don’t know”. The second check asked participants to rate, on a Likert scale, the extent to which they perceived synchrony in the video, from “strongly disagree” to “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. The validity of the participants’ responses was determined by an attention check, a nested question (question 6) within the prosocial question list (see Appendix); this question asked participants to respond with “strongly disagree”; participants who did not do this were assumed to not be paying attention and providing valid responses. In addition to this, participants were informed that any potential invalidity in their responses would carry no consequences, and subsequently asked if they responded in an ingenuine manner. 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

Preliminary Analysis

Firstly, the Q-Q plots of each of the TIPI big-five personality traits and mean belonging were assessed, to check for normality. The Q-Q plots demonstrated all variables to be approximately normally distributed. Furthermore, distributions of personality traits were comparable between conditions. Boxplots were furthermore comparable. Two outliers were found on the openness scale, and two on the conscientiousness scale. One outlier was found per group on the mean belonging scale. Outliers were defined as any scores outside $1.5 * IQR$. Prior to analysis, the Spearman’s correlations between all studied variables were also calculated (see Table 2). All variables met the assumptions necessary to complete the following statistical tests: t-test, ANCOVA.

Table 1

Means and Standard Deviations, per Condition, for each Measure

	Synchrony		Asynchrony	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Openness	5.2	1.1	5.5	1.1
Conscientiousness	5.2	1.3	5.3	1.2
Extraversion	4.2	1.6	4.2	1.7
Agreeableness	4.6	0.9	4.8	1.1
Neuroticism	3.8	1.5	3.8	1.6
Belonging	3.5	1.0	3.3	1.1

Table 2

Correlations Between all Measures

Variable	1	2	3	4	5	6
1. Openness	—					
2. Conscientiousness	.06	—				
3. Extraversion	.36***	-.09	—			
4. Agreeableness	.16	.21*	.02	—		
5. Neuroticism	-.09	-.00	-.32***	-.02	—	
6. Belonging	.19*	-.11	.08	.06	.12	—

* $p < .05$, ** $p < .01$, *** $p < .001$.

Analysis

Our hypotheses prior to data analysis were as follows: Mean belonging will be significantly higher for participants in the synchrony condition than those in the asynchrony condition. Both trait extraversion and trait neuroticism will moderate the relationship between synchrony and belonging. We expect extraversion to strengthen the relationship between observing synchronous movement and belonging, and neuroticism to weaken this relationship.

To determine if the synchronous group had a significantly greater mean belonging than the asynchronous group, a student's t -test was conducted, where the alternative hypothesis was stated to be: mean belonging will be greater in the synchrony condition than in the asynchrony condition. One outlier was present in each group, these were removed before conducting the test.³ Although we see a higher mean belonging in the synchronous group ($M = 3.5$, $SD = 1.0$) than in the asynchronous group ($M = 3.3$, $SD = 1.1$), there was no significant difference, $t(137) = -1.44$, $p = .08$; $d = -.25$.

Following this, we took our two potential moderators: extraversion and neuroticism, and performed a separate ANCOVA for each trait with condition: synchronous or asynchronous, as a

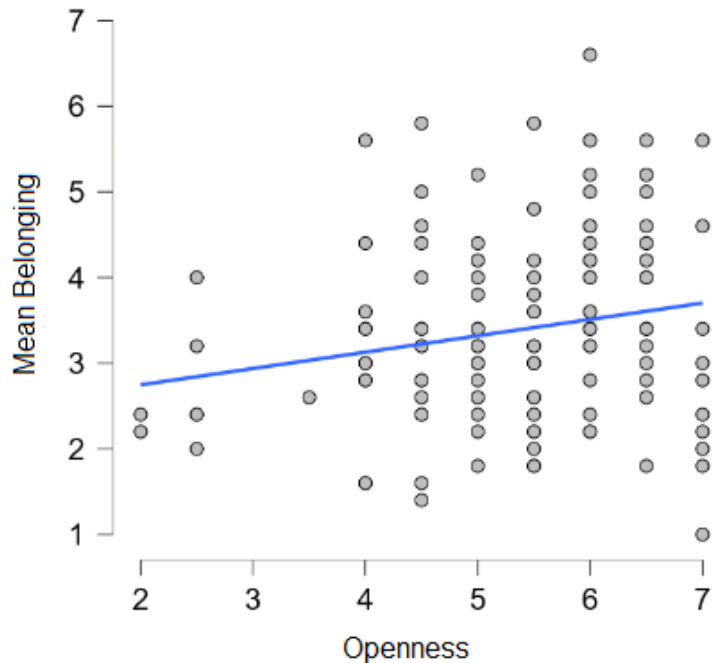
³ When outliers were included, the effect was the same.

fixed factor, and belonging as the dependent variable. In our model with extraversion we found no main effect of condition, $F(1, 137) < 0.01, p = .92, \eta^2 < .01$. Additionally, no main effect of extraversion was found, $F(1, 137) = 1.20, p = .27, \eta^2 < .01$. No significant interaction effect between extraversion and condition was found, $F(1, 137) = 0.22, p = .64, \eta^2 = .01$. Therefore, we found no moderation effect of extraversion on the relationship between synchronous movement and belonging.

In our model with neuroticism we found no main effect of condition, $F(1, 137) = 2.41, p = .12, \eta^2 = .02$. Neuroticism also provided a non-significant main effect, $F(1, 137) = 1.84, p = .18, \eta^2 = .01$. The interaction effect between neuroticism and condition was also non-significant, $F(1, 137) = 1.70, p = .19, \eta^2 = .01$. Thus, we also found no moderation effect of neuroticism on the relationship between synchronous movement and belonging. We also explored the remaining personality traits from the big-five model for possible effects; this produced comparable results. We did however discover a significant main effect of openness to experience on mean belonging; thus, the greater the participant's score on openness to experience, the greater their belonging score, $F(1, 137) = 5.23, p = .02, \eta^2 = .04$. We found no effect of condition within this model though, $F(1, 137) = 1.69, p = .20, \eta^2 = .01$. The interaction effect was also not significant, $F(1, 137) = 0.32, p = .57, \eta^2 < .01$. Thus, no moderation effect of trait openness to experience on the relationship between synchronous movement and belonging was found.

Figure 3

Plot of Mean Belonging on Trait Openness to Experience



Discussion

In this study we investigated the effects of synchronous movement on observers' feelings of belonging, in relation to the big-five personality dimensions. In line with previous research, we hypothesised a positive effect of observing synchronous movement on feelings of belonging, in comparison to observing asynchronous movement (Van Mourik Broekman et al., 2015, 2018, 2019). We also expected to find a moderating effect of extraversion and neuroticism on this relationship; extraversion was expected to strengthen the relationship between observing synchrony and belonging, and neuroticism weaken the relationship between observing synchrony and belonging (Derrick, Keefer & Troisi, 2019; Malone, Pillow & Osman, 2012; Wilson, Harris & Vazire, 2015; Yano, Kase & Oishi, 2021).

Our results failed to provide sufficient evidence for the first hypothesis, there was no significant effect of observing synchronous movement on feelings of belonging in comparison with observing asynchronous movement; in contrast to the previous literature which did find an effect (Van Mourik Broekman et al., 2018, 2019). Additionally, our results found no support for

our hypothesis that extraversion and neuroticism would moderate this relationship; in contrast with the background research (Derrick, Keefer & Troisi, 2019; Malone, Pillow & Osman, 2012; Wilson, Harris & Vazire, 2015; Yano, Kase & Oishi, 2021). We did however find a novel positive relationship between trait openness to experience and feelings of belonging, across both conditions; this was not found by the previous personality research (Derrick, Keefer & Troisi, 2019; Malone, Pillow & Osman, 2012; Wilson, Harris & Vazire, 2015).

Implications

These results fail to provide evidence in favour of the hypothesis that synchronous movement has a positive effect on feelings of belonging, as found in previous research (Van Mourik Broekman et al., 2018, 2019). Our data moved in the predicted direction, but not to the degree where we could find a significant effect. Furthermore, the personality traits extraversion and neuroticism, in contrast to previous studies, were found to have no effect upon this relationship (Derrick, Keefer & Troisi, 2019; Yano, Kase & Oishi, 2021). We believe that these findings cast more doubt on the validity of our design and measures than on the validity of the research we consulted (see Limitations and Suggestions for Future Research).

In Limitations and Suggestions for Future Research, we discussed post-hoc evidence which suggests neuroticism, in contrast to our original conclusions, may have an antagonising effect on the relationship between observing synchronous movement and belonging. This finding provides a unique and intriguing contribution to the more traditional personality literature concerning neuroticism (Derrick, Keefer & Troisi, 2019; Malone, Pillow & Osman, 2012; Wilson, Harris & Vazire, 2015), by suggesting that observing others moving in synchrony can have a negative effect on feelings of belonging, when an individual is high in neuroticism. This finding, thus, supports the conclusions of Yano, Kase & Oishi (2021), that big-five personality

traits, such as neuroticism, can impact the way in which the individual perceives aesthetic stimuli. More broadly, this interaction effect may suggest that viewing others moving synchronously may lead to feelings of exclusion amongst individuals high in neuroticism, regardless of how positively valenced the context is; this has implications for how we approach fostering feelings of togetherness in neurotic individuals.

To foster feelings of togetherness in individuals high in neuroticism, it may be insightful, in the future, to examine different forms of solidarity. During their investigation of synchronous movement, Aafke van Mourik Broekman et al. (2018) highlighted two pathways by which togetherness can be fostered within individuals: mechanical and organic solidarity. Mechanical solidarity, in which the group deduces its sense of togetherness from a common norm. Organic solidarity, in which the group induces its sense of togetherness from the personal contributions of its members. In our study, the dance group moved in synchrony; this is an example of mechanical solidarity; but we did not have a condition in which the dancers displayed organic solidarity. In future research, one could investigate if a display of organic solidarity, which focuses on individual differences, would be more likely to foster feelings of belonging in individuals high in neuroticism than mechanical solidarity. If this is the case, we could use these findings to tailor performances for specific types of individuals, to obtain maximum effect.

As far as we are aware, this is the first study which specifically investigates the effect of observing synchronous movement on belonging, that also controlled for key personality traits such as neuroticism. The strengthening of the relationship between observing synchronous movement and belonging, when controlling for the interaction between neuroticism and synchronous movement in the post-hoc analysis, has great implications for future research. This finding implicates that key individual differences, such as neuroticism, have the potential to

enhance models of synchronous movement and belonging. Including neuroticism seems to provide a model, that, when used in future research, could be better equipped to discover main effects. Additionally, including neuroticism could provide a more informative model. Knowing, for example, how individuals high in neuroticism respond to synchronous movement, in comparison to individuals lower in neuroticism, provides a greater depth of information, and may open up more research avenues than simply knowing how the average individual responds. We hope that these findings will stimulate further study into this topic, with an eye for personality and individual differences.

Limitations and Suggestions for Future Research

Firstly, we have to consider the sample we used, and thus, the respondents we chose to exclude. We had thorough and diverse exclusion criteria, as is evidenced by the sheer number of excluded respondents. Of our 237 respondents 96 were excluded, leaving only 141 of the original respondents over in our sample. Some of our criteria was technical and therefore of little relation to the participant, such as problems viewing the video or hearing the audio. Similarly, our ethical criteria bore little relation to the resulting sample, such as the exclusion of participants under the age of 16 and those who did not agree to their data being used. The manipulation check criteria, however, had a larger impact upon the sample.

Participants were excluded if they did not report observing the synchrony, or asynchrony, which corresponded to their condition; this had the greatest impact on the sample. When such a large number of respondents reported not seeing the synchrony/asynchrony which we provided within the videos, it is crucial to take a closer look at what we specifically required of them. We asked to what extent they thought the dancers moved in synchrony, on a Likert scale from strongly disagree to strongly agree. We initially reasoned that this would increase the reliability

of our data. If the participant did not perceive the synchronous movement presented within their condition we assumed that this synchronous movement would not have had a chance to affect them, and would therefore interfere with our data. For example: a participant in the synchrony condition who did not perceive synchronous movement, may have had a similar experience as a participant in the asynchrony condition. We argued that group differences in a key variables such as mean belonging could have therefore been obscured by individuals who did not perceive synchrony, and may have not had a chance to connect with the performers.

We did not, however, anticipate the level of confusion, amongst some of the respondents, about what we specifically meant by synchrony. When we used our manipulation check scale to measure this construct it became evident that unless everyone in the synchrony condition moved in perfect synchrony, at all times, a large portion of the respondents would report not observing synchrony. A total of 28 participants were therefore excluded from the synchrony condition based their scores on the manipulation check scale, in comparison to only 2 participants removed from the asynchrony condition. It is highly likely that this will have affected our data, especially for personality traits. Low extraversion or high neuroticism may have predisposed participants to focus more on the differences between the performers, and thus to have a different perspective on synchronous movement. In the current study design, such participants would have been excluded for not fitting their condition. If these participants could have been included we may have seen a much stronger moderating effect of extraversion and neuroticism on the relationship between observing synchronous movement and belonging. These participants were excluded before analysing our data, and so we felt it would be unethical to return excluded participants in light of our findings. We have therefore decided to run a post-hoc analysis with these participants

included, to offer insights into the effect this exclusion criterion had upon our results, and to offer informed recommendations for future research.

During our reanalysis we obtained comparable results to the original analysis, with the exception of the interaction between neuroticism and condition.⁴ Upon inspection of the plots we see a positive relationship between neuroticism and belonging in the asynchrony condition, and within the synchrony condition, a negative relationship (see Figure 4 and Figure 5). Therefore, in the post-hoc analysis, neuroticism antagonises the relationship between observing synchronous movement and belonging. Thus, participants high in neuroticism in the synchrony condition reported lower belonging than those in the asynchrony condition. This is in line with the findings of Yano, Kase & Oishi (2021), who proposed that individuals high in neuroticism have low levels of aesthetic sensitivity; if this was the case in our sample, then our participants high in neuroticism could have been less emotionally effected than their counterparts when they observed dancers moving in synchrony. Another possible theoretical explanation for this finding, based on what is known about trait neuroticism (Donnellan et al., 2008; McNulty, 2000), is that those higher in this trait felt excluded when they saw the dance group moving in synchrony. This finding also offers a second important insight for future research. One would expect, if neuroticism antagonises the relationship between observing synchronous movement and belonging, that controlling for this interaction would help us to find a main effect of synchronous movement on belonging. This is reflected in our post-hoc analysis. Our model, which included the interaction between neuroticism and condition, came the closest of all models to finding a significant main effect of observing synchronous movement on belonging.⁵ In future research we therefore recommend study designs which: include participants who did not report perceiving the

⁴ $F(1, 167) = 4.71, p = .048, \eta^2 = .02$

⁵ $F(1, 167) = 3.89, p = .05, \eta^2 = .02$

synchronous movement presented in their condition, and, control for the interaction between neuroticism and observing synchronous movement.

Figure 4

Plot of Mean Belonging on Trait Neuroticism, Within the Synchrony Condition

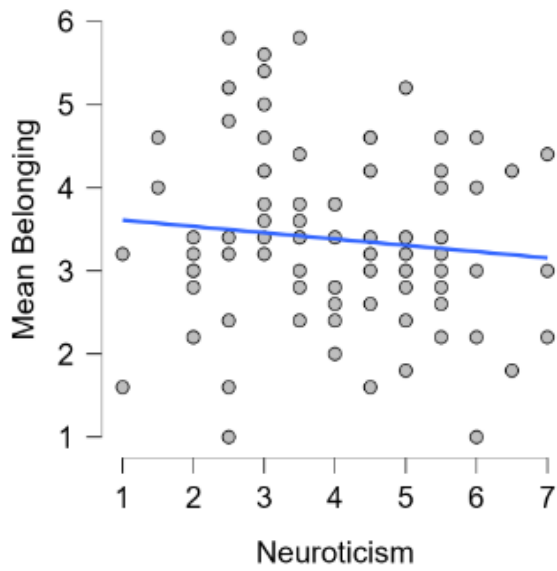
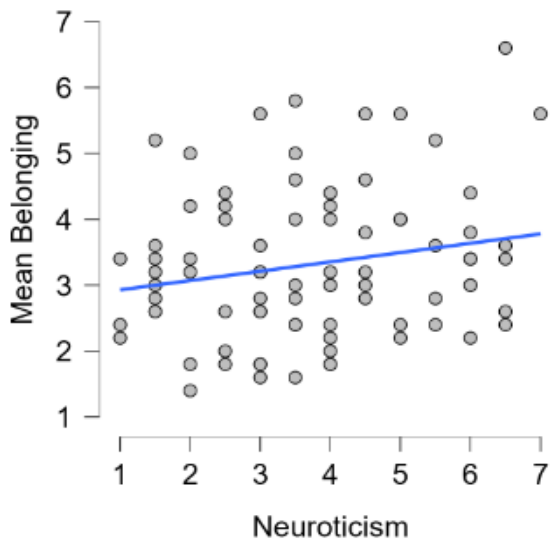


Figure 5

Plot of Mean Belonging on Trait Neuroticism, Within the Asynchrony Condition



In general, scales functioned very well. Our belonging scale was no exception, and produced a similar internal consistency to that of Van Beest & Williams (2006). Aside from its proven internal consistency, we also chose this scale due to its reliable performance in the research of Van Mourik Broekman et al. (2018), which is, in terms of measured variables, comparable to the current study. Notable however in our data was the difference in the mean scores of reverse, and non-reverse, coded items. In general, participants reported very little explicit feelings of belonging, but when asked the reverse: if they felt unaccepted by the group, they scored higher than in the other belonging questions. One could say that this is due to these items measuring opposing aspects of belonging. Alternatively, this difference in mean score could be explained by the negative valence of the wording for the reverse items; not feeling “accepted” may have been perceived as a stronger statement than not feeling that one “belonged”. In order to investigate the impact this may have had on our results, we conducted a post-hoc analysis, with the mean belonging scale split into two scales: one which measured mean belonging with exclusively reverse coded items, and one measuring mean belonging with only the non-reverse coded items. After making these changes we obtained comparable levels of significance to the results in our original analysis; there is thus little utility in such modifications to the scale. Therefore, if one wishes to investigate how different aspects of belonging are effected by observing synchronous movement, it is advisable to construct similar studies using alternative, expanded belonging scales. The 5-item belonging subscale of The Need Threat Scale (Van Beest & Williams, 2006) was ideal in the current context, due to its short length; but more extensive, multi-component belonging scales, such as the 16-item Perceived Group Inclusion Scale (Jansen et al., 2014) may be more appropriate for future research. One would expect this scale to not only provide richer, and more detailed belonging data, but possibly also clearer

insights into the specific aspects of belonging upon which observing synchronous movement may exercise an effect.

Conclusions

Synchronous movement has the potential to connect performers with their audiences, and foster a sense of mutual togetherness. We often see this reflected in the practices and rituals of diverse cultures, nations and organisations. Synchronous movement thus appears to be a deeply ingrained feature of social organisation, that has the potential to bridge physical barriers between actors and observers. But not every observer is the same, and not every observer responds in a similar manner to synchronous movement; where some observers feel a sense of togetherness, others may feel excluded. Additionally, some observers may be more open to feeling a sense of connection with performances than others. This has implications for how we foster mutual feelings of togetherness between actors and observers: we can be more inclusive. With a greater knowledge of how synchronous movement is perceived by different individuals within society, we are better informed to create truly inclusive displays of group unity in the future.

References

- Asendorpf, J. B., & Wilpers, S. (1998). Personality effects on social relationships. *Journal of personality and social psychology*, *74*(6), 1531–1544.
<https://doi.org/10.1037/0022-3514.74.6.1531>
- Caprara G., Steca P., Zelli A., Capanna C. (2005). A new scale for measuring adults' prosocialness. *Eur. J. Psychol. Assess.* *21* 77–89. 10.1027/1015-5759.21.2.77
- Chappell, K., Redding, E., Crickmay, U., Stancliffe, R., Jobbins, V., & Smith, S. (2021). The aesthetic, artistic and creative contributions of dance for health and wellbeing across the lifecourse: A systematic review. *International Journal of Qualitative Studies on Health and Well-Being*, *16*(1).
<https://doi-org.proxy-ub.rug.nl/10.1080/17482631.2021.1950891>
- Derrick, J. L., Keefer, L. A., & Troisi, J. D. (2019). Who needs friends? personality as a predictor of social surrogate use. *Personality and Individual Differences*, *138*, 349–354. <https://doi.org/10.1016/j.paid.2018.10.028>
- Donnellan, M. B., Burt, S. A., Levendosky, A. A., & Klump, K. L. (2008). Genes, personality, and attachment in adults: A multivariate behavioral genetic analysis. *Personality and Social Psychology Bulletin*, *34*(1), 3-16.
<https://doi.org/10.1177/0146167207309199>
- Fischer, R., Callander, R., Reddish, P., Bulbulia, J., (2013). How Do Rituals Affect Cooperation?. *Human Nature*, *24*(2), 115–125. doi:10.1007/s12110-013-9167-y
- Jansen, W. S., Otten, S., van der Zee, K. I., & Jans, L. (2014). Inclusion: Conceptualization and measurement. *European Journal of Social Psychology*, *44*(4), 370-385. <https://doi.org/10.1002/ejsp.2011>

- Kim, K., & Cho, B. (2011). Development of an Individualism-Collectivism Scale Revisited: A Korean Sample. *Psychological Reports, 108*(2), 393–401.
<https://doi.org/10.2466/02.07.17.21.PR0.108.2.393-401>
- Kreutzmann, M., Zander, L., & Webster, G. D. (2018). Dancing is belonging! How social networks mediate the effect of a dance intervention on students' sense of belonging to their classroom. *European Journal of Social Psychology, 48*(3), 240–254. <https://doi-org.proxy-ub.rug.nl/10.1002/ejsp.2319>
- Leary, M. R., Kelly, K. M., Cottrell, C. A., Schreindorfer, L. S., (2013). Construct Validity of the Need to Belong Scale: Mapping the Nomological Network. *Journal of Personality Assessment, 95*(6), 610–624.
<https://doi.org/10.1080/00223891.2013.819511>
- Malone, G. P., Pillow, D. R., & Osman, A. (2012). The General Belongingness Scale (GBS): Assessing achieved belongingness. *Personality and Individual Differences, 52*(3), 311–316. <https://doi.org/10.1016/j.paid.2011.10.027>
- McNulty, J. L. (2000). Five-factor model of personality. In A. E. Kazdin (Ed.), *Encyclopedia of Psychology, 375–376*. American Psychological Association.
<https://doi-org.proxy-ub.rug.nl/10.1037/10518-183>
- Rubin, Z. (1970). Measurement of romantic love. *Journal of personality and social psychology, 16*(2), 265.
- Selfhout, M., Burk, W., Branje, S., Denissen, J., van Aken, M., & Meeus, W. (2010). Emerging late adolescent friendship networks and Big Five personality traits: A social network approach. *Journal of Personality, 78*(2), 509–538.
<https://doi-org.proxy-ub.rug.nl/10.1111/j.1467-6494.2010.00625.x>

- Van Beest, I., & Williams, K. D. (2006). When inclusion costs and ostracism pays, ostracism still hurts. *Journal of Personality and Social Psychology, 91*(5), 918–928. <https://doi-org.proxy-ub.rug.nl/10.1037/0022-3514.91.5.918>
- Van Mourik Broekman, A., Gordijn, E., Postmes, T., Koudenburg, N., & Krans, K. (2015). Dance for Solidarity: Uniting Dancers and Audience Through Movement. In H. Koolen, J. Naafs, R. Naber, & L. Wildschut (Eds.), *Danswetenschap in Nederland*. 79-88. Amsterdam: Vereniging voor Dansonderzoek.
- Van Mourik Broekman, A., Gordijn, E. H., Koudenburg, N., & Postmes, T. (2018). Reshaping social structure through performances: Emergent Solidarity between actors and observers. *Journal of Experimental Social Psychology, 76*, 19–32. <https://doi.org/10.1016/j.jesp.2017.12.002>
- Van Mourik Broekman, A., Koudenburg, N., Gordijn, E. H., Krans, K. L. S., & Postmes, T. (2019). The impact of art: Exploring the social-psychological pathways that connect audiences to live performances. *Journal of Personality and Social Psychology, 116*(6), 942–965. <https://doi-org.proxy-ub.rug.nl/10.1037/pspi0000159.supp>
- Watson, D., Clark, L. A., & Tellegen, A. (1988). Development and validation of brief measures of positive and negative affect: the PANAS scales. *Journal of personality and social psychology, 54*(6), 1063
- Wilson, R. E., Harris, K., Vazire, S., (2015). Personality and Friendship Satisfaction in Daily Life: Do Everyday Social Interactions Account for Individual Differences in

Friendship Satisfaction?. *European Journal of Personality*, 29(2), 173–186.

<https://doi.org/10.1002/per.1996>

Wiltermuth (2012) Synchrony and destructive obedience. *Social Influence*, 7:2, 78-89,

<https://doi.org/10.1080/15534510.2012.658653>

Yano, K., Kase, T., & Oishi, K. (2021). The associations between sensory processing sensitivity and the Big Five personality traits in a Japanese sample. *Journal of Individual Differences*, 42(2), 84–90.

<https://doi-org.proxy-ub.rug.nl/10.1027/1614-0001/a000332>

Appendix

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.

Neither
agree
nor
disagree

Strongly disagree Moderately disagree Disagree a little Agree a little Moderately agree Strongly agree

I see myself as
reserved, quiet.

I see myself as
sympathetic,
warm.

I see myself as
disorganized,
careless.

I see myself as
calm,
emotionally
stable.

I see myself as
conventional,
uncreative.

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.

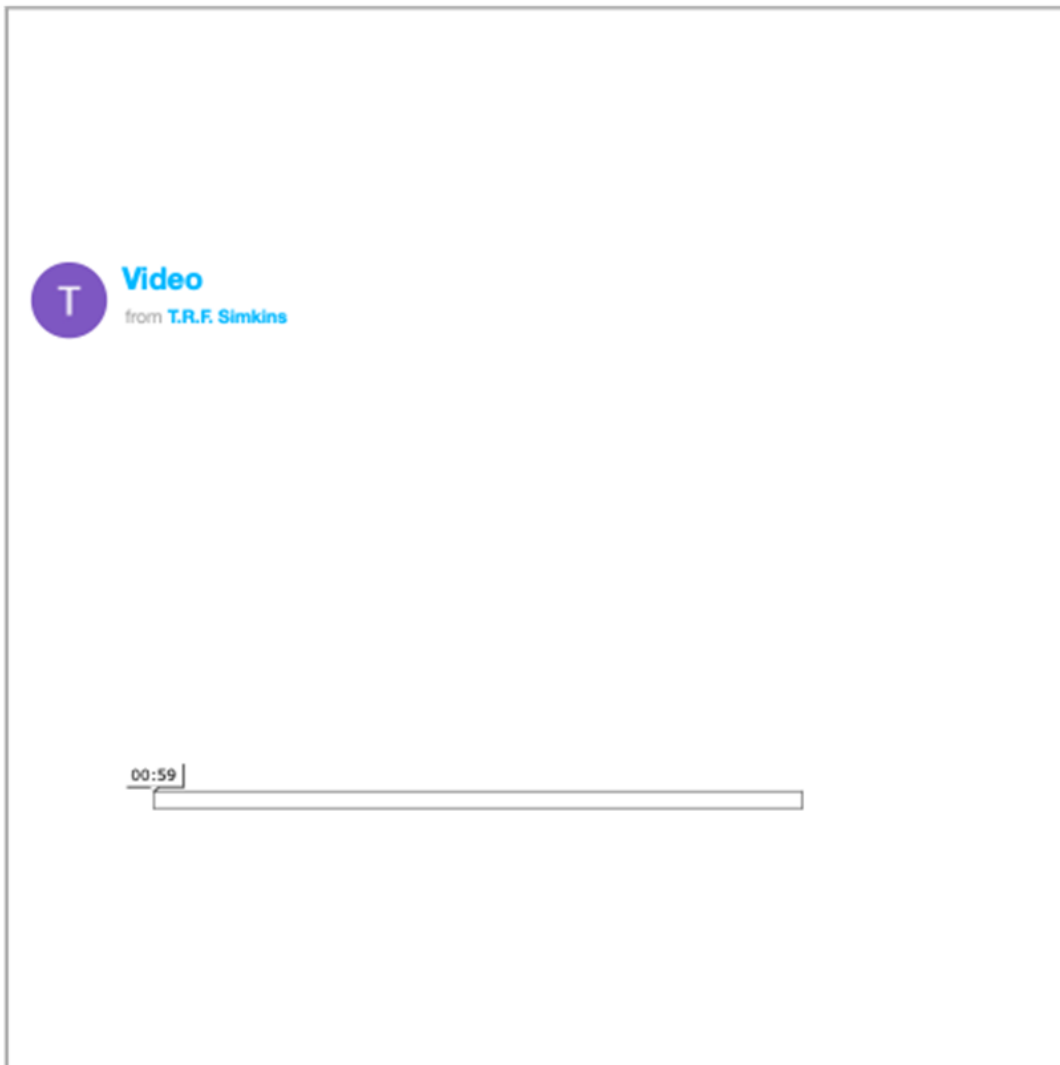
Video sync

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.



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/>

PLEASE CLICK ">>" TO RECORD YOUR RESPONSES
and receive SONA course credits (in case you are participating via the SONA platform)

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