Research Article

Dance Across Cultures: Joint Action Aesthetics in Japan and the UK

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Abstract

Western European and East Asian cultures show marked differences in aesthetic appreciation of the visual arts. East Asian aesthetics are often associated with a holistic focus on balance and harmony, in contrast to Western aesthetics, which often focus on the expression of the individual. In this study, we examined whether cultural differences also exist in relation to the aesthetics of dance. Japanese and British participants completed an online survey in which they evaluated synchronous and asynchronous dance video clips on eight semantic differential scales. We observed that the aesthetics of group dance depend on cultural background. Specifically, British participants preferred asynchronous over synchronous dance whereas Japanese participants equally liked synchronous and asynchronous dance movement. For both cultures, preferences were based on distinct semantic associations with movement synchrony. We argue that cultural differences in aesthetic perception of group dance relate to the culturally specific social signals conveyed by unison movement.

Keywords

aesthetic perception, dance, cross-cultural psychology, Japan, United Kingdom

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Across all cultures people dance. Yet, despite its universal nature, functions and definitions of dance vastly differ between societies and range from healing rituals to recreational entertainment (Hanna, 1987). Despite a growing interest in an experimental aesthetics of movement and dance (Christensen et al., 2016; Jola et al., 2014; Kirsch et al., 2015; Orgs et al., 2013) the influence of cultural background on aesthetic perception of dance has not been studied experimentally.

Previous studies have found differences in aesthetic appreciation between participants from Eastern and Western samples. For instance, Chinese Americans, Chinese, and Koreans compared to Americans of European descent differed in their aesthetic appreciation of abstract shapes (Kim & Markus, 1999). Landscape and portrait drawings of Taiwanese, Koreans, Japanese, and Chinese were different to the ones produced by North Americans (Masuda et al., 2008), preference for colour combinations was different when comparing Japanese and Asian Canadians against Americans of European descent (Ishii et al., 2014), and preference for horizon line position in visual compositions differed between Japanese and Canadians (Nand et al., 2014). These culturally specific preferences have been linked to differences in attentional focus between Western and Eastern cultures (Masuda et al., 2008). While North American participants reportedly focus on specific objects and their details present in the visual display 'analytically', Japanese participants may perceive a group of objects 'holistically', that is in close relation to its visual context (Masuda & Nisbett, 2001; Miyamoto et al., 2006).

Eastern and Western cultures have also been reported to differ on how they balance the relative importance of individual and group interests, that is, their collectivist and individualist cultural values (Hofstede, 2001). Collectivist cultures focus on the interactions with others prioritising the common interests and needs of the group, while individualist cultures prioritise particular interests of the person (Hofstede, 2001; Triandis, 1995).

Individualist and collectivist cultural orientation are linked to attentional focus (Varnum et al., 2010). Reportedly, people in individualist cultures favour an analytic perceptual style, focussing on specific objects in the foreground (e.g., Masuda et al., 2008). This may reflect an individualist emphasis on personal agency and distinctiveness. In contrast, collectivist cultures reportedly exhibit a holistic perceptual and appreciation style, focussing on contextual information and the entire scene (Masuda et al., 2008). A holistic appreciation style resonates with a collectivist emphasis on group harmony and sensitivity to social contexts. Various within-nation studies also reported that a holistic perceptual style was prominent in collectivist communities and regions whereas an analytic perceptual style was prominent in individualist communities and regions (Kitayama et al., 2006; Knight & Nisbett, 2007; Uskul et al., 2008).

Additionally, North Americans prefer highly arousing experiences (e.g., excitement) while Taiwanese participants prefer low arousal experiences

(e.g., calmness) (Tsai et al., 2007). More specifically, traditional Japanese aesthetics have been characterised by a preference for simple aesthetic objects, often with negative emotions, such as sadness (Keene, as cited in Odin, 2016; Odin, 2016).

Based on these individualism/collectivism comparisons on preference for perceiving images, we expect potential cultural differences regarding the aesthetic preferences for group dance. However, the notion of individualism and collectivism has also been criticised for been too general and loose, and for ignoring differences within societies and commonalities among cultures (Wong et al., 2018). For example, it has been reported that, in general, Japanese are more collectivist while North Americans are more individualist (Hofstede, 2001). However, Japanese residents from Hokkaido tend to be as individualist as Americans of European descent in North America in comparison to non-Hokkaido residents in Japan (Kitayama et al., 2006). To avoid cultural generalisations, it has been suggested to reconceptualise the idea of individualism and collectivism by emphasising on narrower constructs such as group harmony (Wong et al., 2018). In line with this, we assume that preference for watching synchronous dance might be related to a narrower construct such as preference for group harmony, which is associated to broader constructs such as collectivism (Wong et al., 2018).

In this study, we examine whether cultural differences influence the aesthetic appreciation of the performing arts, and specifically dancing in groups. Synchronous or unison movement is an important feature of dance choreography and has clear links to social interaction and cultural transmission (Flinn, 1997; Hagen & Bryant, 2003). For example, moving in synchrony increases group affiliation (Reddish et al., 2013) and cooperation between group members (Wiltermuth & Heath, 2009) and can even increase the pain thresholds of the dancers (Tarr et al., 2015). Watching other people move in synchrony also communicates group cohesion to spectators and is rewarding (Eskenazi et al., 2015; Lakens & Stel, 2011; McEllin et al., 2020; Tang Poy & Woolhouse, 2020).

In a previous study, we have shown that during live dance performances, dynamic changes in movement synchrony indeed predict continuous ratings of enjoyment (Vicary et al., 2017). In this study, the direction of the relationship between aesthetic pleasure and synchrony was positive in some performances, but negative in others, suggesting that the affective valence of synchrony may strongly depend not only on stylistic features of the performance, but also on spectator characteristics, including culturally held norms and beliefs. If the aesthetic value of movement synchrony indeed relates to the social signals of group affiliation (Hagen & Bryant, 2003), cultural norms concerning the role of the individual within society should influence the aesthetic value of movement synchrony.

Dancing in synchrony thus celebrates socio-cultural values well in line with collectivist aesthetics as it signals high levels of cooperation and similarity

between group members (Emswiller et al., 1971; Gaertner & Bickman, 1971; Sherif et al., 1961). Collectivist aesthetics should therefore display a positive relation between pleasure and synchrony. In contrast, individualist aesthetics might predominantly focus on the negative connotations of moving in synchrony, including conformity and in-group/out-group bias (Asch, 1951; Tajfel et al., 1971) and exhibit a negative relationship between pleasure and synchrony.

Moreover, synchronous movement is likely to favour a holistic perceptual style, as individual performers are perceptually bound into groups by gestalt laws of common fate, good continuation, and similarity (Arnheim, 1974; Koffka, 1935; Orgs et al., 2013; Wagemans et al., 2012; Wertheimer, 1923/1938). In contrast, asynchronous movement should favour an analytic perceptual focus on individual dancers. Indeed, collectivist cultures prefer visual stimuli associated to conformity and harmony, whereas individualist cultures tend to prefer visual uniqueness (Ishii et al., 2014; Kim & Markus, 1999). We propose that asynchronous dance should artistically represent typical Western individualist values such as the independence and uniqueness of each individual in relation to the group. In contrast, collectivist values may be more readily represented in synchronous dance, with its focus on interdependence of group members, conformity, and similarity (Lakens & Stel, 2011).

Considering these previous findings and theoretical implications, the present study compared British and Japanese participants. In this context, British participants represent a relatively individualist cultural background, and should exhibit a more analytic perceptual style that favours asynchrony over synchrony. Japanese participants represent a collectivist cultural background and should exhibit a holistic perceptual style that favours synchrony over asynchrony. Cultural differences in aesthetic appraisal might reflect culturally specific semantic associations with synchrony: We therefore collected semantic differentials for a range of adjectives that might relate to the cultural meaning of synchrony. Specifically, ratings for adjectives such as calm, repeated, controlled, uniform, familiar, and obvious, should characterise synchronous videos; while adjectives like exciting, varied, accidental, diverse, unfamiliar, and subtle should better characterise asynchronous videos.

In the absence of prior research on the cultural meaning of movement synchrony, we selected adjectives that reflect key dimensions of aesthetic appreciation (Berlyne, 1974; Osgood et al., 1957), including evaluative value (dislike – like), complexity (repeated – varied and subtle – obvious), arousal potential (calming – exciting) and familiarity (unfamiliar – familiar). Two adjective pairs probed socially relevant associations with perceived control (accidental – controlled) and diversity (uniform – diverse). Finally, we collected ratings of perceived sadness and happiness to explore whether different cultures associate different emotions with synchrony and asynchrony.

Concretely, British and Japanese participants completed an online survey in which they watched videoclips of synchronous and asynchronous dance scenes

and rated their aesthetic features by using semantic differential scales. Firstly, we predict that British participants will prefer asynchronous dance, while Japanese participants should prefer synchronous dance. Secondly, we predict that cultural differences in aesthetic preference for synchrony will be associated with culturally distinct semantic associations with synchrony.

Method

Participants

We recruited British and Japanese respondents to compare two samples with Western European and Eastern Asian cultural background, respectively. In this regard, previous studies have characterised samples from the United Kingdom as individualist (Hofstede, 1984, 2001; Lowe, 1996), and samples from Japan as collectivist (Hofstede, 1984; Hofstede et al., 2010). A sample size of 100 participants was determined with G*Power (Faul et al., 2007) to detect a small effect size, having a statistical power of 0.80.

British Sample. The UK version of the online survey was advertised on social networks, specialised websites and by email. Forty-two British respondents (28 female) with age ranged from 18 to 60 ($M = 24.9$, $SD = 10.79$) participated in the study. None of the British participants had previous professional dance training and none of the participants reported being a frequent visitor of dance performances. All British participants were born and raised in the UK with both parents also born and raised in the UK. Participation was voluntary. One £50 Amazon gift card was drawn every 30 respondents as an incentive for participation.

Japanese Sample. The Japanese version of the online survey was advertised on the Participant Pool website of Kobe University. Fifty Japanese respondents (29 female, 1 missing value) with age ranged from 18 to 22 (1 missing value, $M = 19.65$, $SD = 1.05$) participated in the study. None of the Japanese participants had previous professional dance training and none of the participants reported being a frequent visitor of dance performances. One ¥5000 (Japanese Yen) Amazon gift card was drawn every 30 respondents as an incentive for participation.

Materials

Dance stimuli consisted of 20 muted black and white video clips presenting synchronous and asynchronous choreographies from folk, classical, and contemporary dance. Clips showed between 6 to 100 dancers approximately. Videos were searched on Google and YouTube by using keywords such as group dance,

flash mobs, performances, opening and closing ceremonies of Olympic games, synchronous movement, and asynchronous movement. The initial sample of 57 downloaded videos was reduced to 20 videos after excluding military parades, prop-based routines, and incidental product placement. The selected 10 synchronous videos and 10 asynchronous videos were muted, converted to black and white, and trimmed to last between 6 and 14 seconds. All videos are available publicly on the research database of Goldsmiths, University of London (http://research.gold.ac.uk/27995/).

Measures

Semantic Differential Scales. We used eight 7-point semantic differential scales to measure aesthetic ratings of the dance video clips. Participants were instructed to use the semantic differential scales to rate each dance video clip based on the dance movements they see in the videos, ignoring the clothes of the dancers or the background of each scene. There were 8 items below each video clip. We assessed the following concepts: We included evaluative value (dislike – like), complexity (repeated – varied and subtle – obvious), and arousal (calming-exciting) dimensions of aesthetic judgement. Moreover, we included two adjective pairs to elucidate whether synchrony as a social signal (Hagen & Bryant, 2003) conveyed different meanings to UK and Japanese participants (Heise, 2014; Osgood et al., 1975). These semantic concepts probed socially relevant associations with perceived control (accidental – controlled) and diversity (uniform – diverse). Previous psychological and philosophical studies have proposed that Eastern and Western cultures appreciate emotions in different ways (Tsai et al., 2007; Keene cited in Odin, 2016; Odin, 2016). Therefore, we included happiness (sad – happy) to assess whether synchronous dancing was associated with positive or negative perceived emotions and whether emotional connotations might depend on cultural background. Finally, we included a familiarity scale (unfamiliar – familiar) to control for potential differences in exposure to the movement videos. The order of videos and semantic differential scales was fully randomised.

Background Questionnaire

The background questionnaire asked for participants' demographic information, such as gender, age, nationality, ethnicity, whether the respondent had lived in another country different than the UK more than one year (for the British version), whether the respondent had lived in another country different than Japan more than one year (for the Japanese version), language spoken at home, whether the respondent had received professional dance training, number of years attending dance classes, kind of dance practiced and whether the respondent was a frequent visitor of dance performances. Participants that lived more than one year abroad or that spoke a foreign language at home

were excluded to increase sample representativeness (two Japanese participants and four British respondents for living abroad, and one British participant for speaking another language at home). The demographic questions for nationality, ethnicity, and language spoken at home were not included in the Japanese version.

Procedure

Both the British and the Japanese versions of the online survey were created using Survey Monkey. The whole English version of the survey including all the information, scales and questionnaires was back translated to Japanese by two Japanese native speakers. The survey was programmed to randomise and counterbalance the items automatically and to keep a specific order for the general sections.

At the beginning of the experiment general information describing purpose of the survey was displayed. Then 20 dance video clips (10 synchronous and 10 asynchronous dance movements) were randomly presented. Videos were presented one by one, and participants rated each dance scene using eight sematic differential scales that were below each one of the video clips. Semantic differential scales were also presented in randomised order.

Then, participants completed questionnaires about demographic information (background questionnaire). The survey ended with a debrief and the option to enter an email address to participate in the lottery. All participants signed informed consent. The study was approved by the ethical committees at Brunel University London and Goldsmiths, University of London.

Results

We computed all the 7-point semantic differential scales as ranging from -3 to 3, meaning that a tendency toward negative values would represent proximity to one construct, while a positive tendency would represent proximity toward the opposite construct. The anonymised dataset is publicly available on the research database of Goldsmiths, University of London (http://research.gold.ac.uk/27995/).

Aesthetic Judgement of Synchronous and Asynchronous Dance Videos

To assess cultural differences across all eight semantic differential scales, we conducted a 2 (Culture: UK, Japan)×2 (Dance Type as within-subject variable: Synchrony, Asynchrony) mixed design factorial ANOVA for each of the eight semantic differential scales.

Cultural Differences in Aesthetic Preference (Dislike–Like). The interaction effect between Culture and Dance Type was significant (see Figure 1),

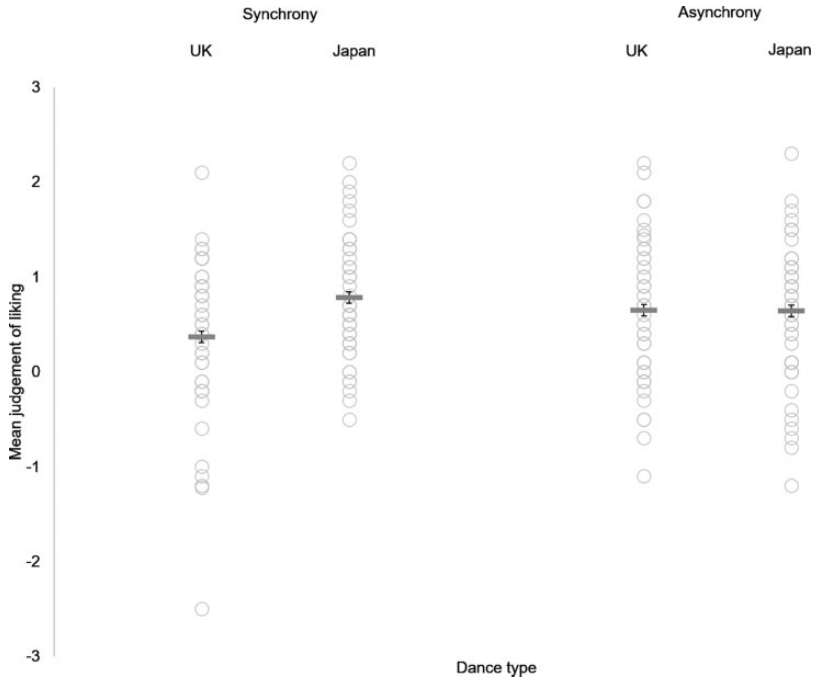

Figure 1. Mean Judgement of Liking for Synchronous and Asynchronous Dance in British and Japanese Participants. Dots represent data points. Grey horizontal lines represent mean values. Error bars represent standard error of the mean (SEM). The x-axis depicts the dance type (synchronous or asynchronous) presented to both samples (British and Japanese). The y-axis depicts mean scores of liking ratings, ranging from −3 (dislike) to 3 (like).

Wilks' Lambda = .93, F (1, 90) = 6.37, p = .013, η_p^2 = .07. A dependent t-test showed a significant simple effect, where British participants preferred asynchronous dance (M = .65, SD = .79) to synchronous dance (M = .37, SD = .88), $t(41) = -2.26$, p = .029, r = .33. In contrast, this result was not significant for the Japanese sample, when comparing synchronous dance (M = .78, SD = .63) and asynchronous dance (M = .64, SD = .73), $t(49) = 1.25$, p = .217, regarding liking judgement. The main between-subjects effect for culture (UK: M = .51, SD = .74; Japan: M = .71, SD = .56) and the main within-subjects effect for Dance Type were not significant, Wilks' Lambda = 1, F (1, 90) = .72, p = .399 and F (1, 90) = 2.18, p = .143.

Judgement of Arousal (Calming–Exciting). Both groups perceived asynchronous dance as significantly more exciting (M = 0.71, SD = 0.45) than synchronous dance (M = −.02, SD = .55) as indicated by the main effect of Dance Type, Wilks' Lambda = .41, F (1, 90) = 127.89, p < .001, η_p^2 = .59. However, there

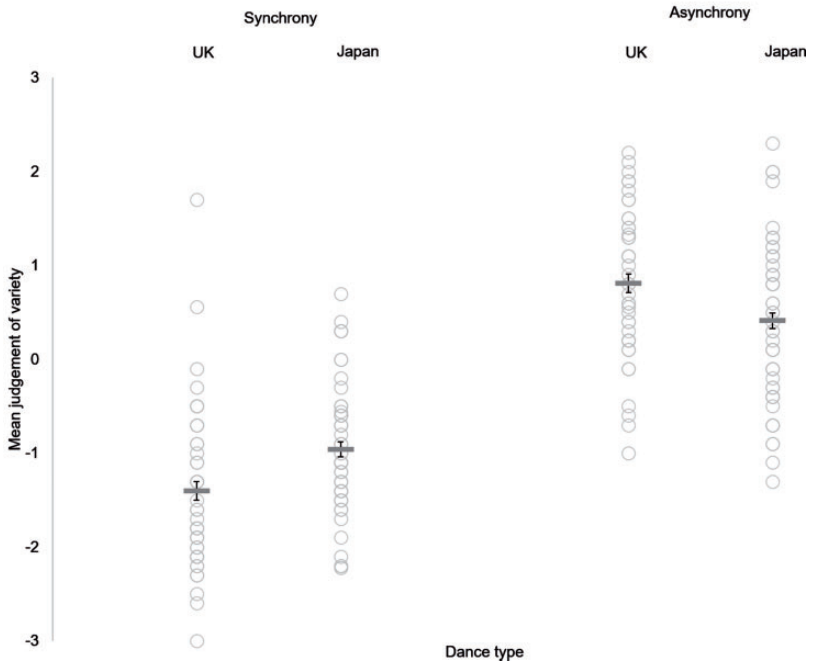

Figure 2. Mean Judgement of Variety for Synchronous and Asynchronous Dance in British and Japanese Participants. Dots represent data points. Grey horizontal lines represent mean values. Error bars represent SEM. The x-axis depicts the dance type (synchronous or asynchronous) presented to both samples (British and Japanese). The y-axis depicts mean scores of variety ratings provided by participants, ranging from −3 (repeated) to 3 (varied).

were no significant differences between British ($M = .42$, $SD = .43$) and Japanese ($M = .28$, $SD = .34$) respondents on how they perceived the arousal in both types of dance, $F\ (1, 90) = 3.06$, $p = .084$. The interaction effect between Culture and Dance Type was not significant, Wilks' Lambda = .99, $F\ (1, 90) = .61$, $p = .437$.

Judgement of Variety (Repeated–Varied). The main effect of Dance Type was significant, Wilk's Lambda = .30, $F\ (1, 90) = 211.06$, $p < .001$, $\eta_p^2 = .70$, suggesting that participants perceived asynchronous dance ($M = .59$, $SD = .86$) as more varied than synchronous dance ($M = -1.16$, $SD = .82$). The main between-subjects effect for Culture was not significant (UK: $M = -.30$, $SD = .58$; Japan: $M = -.28$, $SD = .57$), $F\ (1, 90) = .03$, $p = .858$. The interaction effect between Culture and Dance Type was significant (see Figure 2), Wilks' Lambda = .88, $F\ (1, 90) = 11.78$, $p = .001$, $\eta_p^2 = .12$.

Independent t-tests showed significant simple effects. British participants perceived more variety in asynchronous dance ($M = .81$, $SD = .81$) in comparison

Figure 3. Mean Judgement of Control for Synchronous and Asynchronous Dance in British and Japanese Participants. Dots represent data points. Grey horizontal lines represent mean values. Error bars represent SEM. The x-axis depicts the dance type (synchronous or asynchronous) presented to both samples (British and Japanese). The y-axis depicts mean scores of control ratings, ranging from −3 (accidental) to 3 (controlled).

to Japanese participants ($M = .41$, $SD = .87$), $t(90) = 2.27$, $p = .025$, $r = .23$. Also, Japanese participants perceived more variety in synchronous dance ($M = -.96$, $SD = .70$) in comparison to British participants ($M = -1.40$, $SD = .90$), $t(90) = -2.66$, $p = .009$, $r = .27$.

Judgement of Control (Accidental–Controlled). The main within-subjects effect for Dance Type was significant, Wilks' Lambda = .12, F (1, 90) = 649.70, $p < .001$, $\eta_p^2 = .88$, with synchronous dance being perceived as more controlled ($M = 2.27$, $SD = .56$) than asynchronous dance ($M = .04$, $SD = .70$). The main between-subjects effect for Culture was not significant (UK: $M = 1.26$, $SD = .47$; Japan: $M = 1.07$, $SD = .45$), F (1, 90) = 3.70, $p = .058$. The interaction effect between perception of control and culture was significant (see Figure 3), Wilks' Lambda = .95, F (1, 90) = 4.44, $p = .038$, $\eta_p^2 = .05$.

An independent t-test showed significant simple effects. British participants perceived asynchronous dance as more controlled ($M = .24$, $SD = .73$) in comparison to Japanese participants ($M = -.13$, $SD = .63$), $t(90) = 2.60$, $p = .011$, $r = .26$.

Judgement of Familiarity (Unfamiliar–Familiar). The main effect for Dance Type was significant, Wilks' Lambda = .63, F (1, 90) = 52.35, $p < .001$, $\eta_p^2 = .37$. Participants perceived the synchronous dance ($M = .24$, $SD = .94$) as more familiar than asynchronous dance ($M = -.36$, $SD = .85$). The main effect for Culture was significant (UK: $M = .21$, $SD = .78$; Japan: $M = -.29$, $SD = .75$), F (1, 90) = 10.01, $p = .002$, $\eta_p^2 = .10$. According to this, British participants perceived synchronous and asynchronous dance as more familiar in comparison to Japanese participants. The interaction effect between perception of familiarity and culture was not significant, Wilks' Lambda = 1.00, F (1, 90) = .03, $p = .861$.

Judgement of Obviousness (Subtle–Obvious). The main effect for Dance Type was significant, Wilks' Lambda = .92, F (1, 90) = 7.36, $p = .008$, $\eta_p^2 = .08$. Synchronous dance was perceived as more obvious ($M = .91$, $SD = .77$) than asynchronous dance ($M = .58$, $SD = .83$). The main between-subjects effect for culture was significant, F (1, 90) = 9.36, $p = .003$, $\eta_p^2 = .09$, where British participants perceived dance movements as more obvious ($M = .94$, $SD = .64$) than did Japanese participants ($M = .58$, $SD = .48$). The interaction effect between perception of obviousness and culture was significant (see Figure 4), Wilks' Lambda = .85, F (1, 90) = 16.26, $p < .001$, $\eta_p^2 = .15$.

Dependent t-tests to assess significant simple effects showed that Japanese participants perceived more obviousness in synchronous dance ($M = .94$, $SD = .69$) than in asynchronous dance ($M = .22$, $SD = .75$), $t(49) = 4.71$, $p < .001$, $r = .56$. In contrast, British participants did not perceive significant differences in obviousness between synchronous ($M = .87$, $SD = .86$) and asynchronous dance ($M = 1.00$, $SD = .72$), $t(41) = 1.00$, $p = .338$. An independent t-test showed that British participants perceived asynchronous dance as more obvious ($M = 1.00$, $SD = .72$) in comparison to Japanese participants ($M = .22$, $SD = .75$), $t(90) = 5.10$, $p < .001$, $r = 0.47$.

Judgement of Diversity (Uniform–Diverse). The main within-subjects effect for Dance Type was significant, Wilks' Lambda = .12, F (1, 90) = 663.81, $p < .001$, $\eta_p^2 = .88$, indicating that asynchronous dance was perceived as more diverse ($M = .95$, $SD = .67$) than synchronous dance ($M = -2.04$, $SD = .83$). The main effect for Culture was not significant (UK: $M = -.45$, $SD = .62$; Japan: $M = -.63$, $SD = .39$), F (1, 90) = 2.81, $p = .097$. The interaction effect between Culture and Dance Type was not significant, Wilks' Lambda = 1.00, F (1, 90) = .14, $p = .705$.

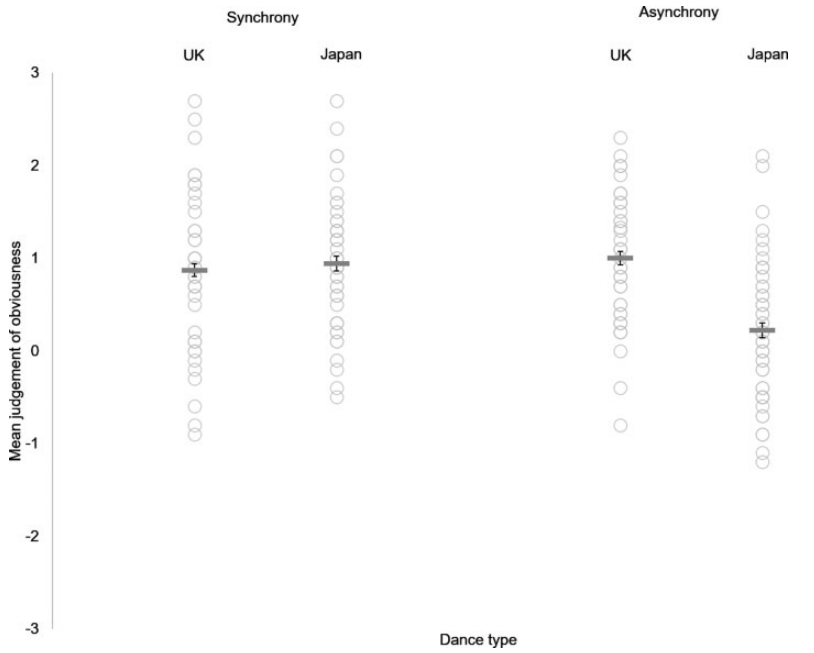

Figure 4. Mean Judgement of Obviousness for Synchronous and Asynchronous Dance in British and Japanese Participants. Dots represent data points. Grey horizontal lines represent mean values. Error bars represent SEM. The x-axis depicts the dance type (synchronous or asynchronous) presented to both samples (British and Japanese). The y-axis depicts mean scores of obviousness ratings, ranging from −3 (subtle) to 3 (obvious).

Judgement of Happiness (Sad–Happy). Asynchronous dance was perceived as happier ($M = .92$, $SD = .49$) than synchronous dance ($M = .64$, $SD = .67$) in both groups, as indicated by the main effect of Dance Type, Wilks' Lambda = .83, $F(1, 90) = 18.43$, $p < .001$, $\eta_p^2 = .17$. The main effect for Culture was significant (UK: $M = .57$, $SD = .49$; Japan: $M = .95$, $SD = .41$), $F(1, 90) = 15.93$, $p < .001$, $\eta_p^2 = .15$, where both dance types were perceived as happier by Japanese participants. The interaction effect between Culture and Dance Type was significant (see Figure 5), Wilks' Lambda = .95, $F(1, 90) = 5.28$, $p = .024$, $\eta_p^2 = .06$.

Dependent t-tests showed significant simple effects for British participants only, where they perceived more happiness in asynchronous videos ($M = .80$, $SD = .53$) than in synchronous videos ($M = .35$, $SD = .71$), $t(41) = 3.76$, $p = .001$, $r = .51$. Japanese participants did not perceive significant differences in happiness between asynchronous ($M = .88$, $SD = .54$) and synchronous dance scenes ($M = 1.02$, $SD = .43$) $t(49) = 1.83$, $p = .073$.

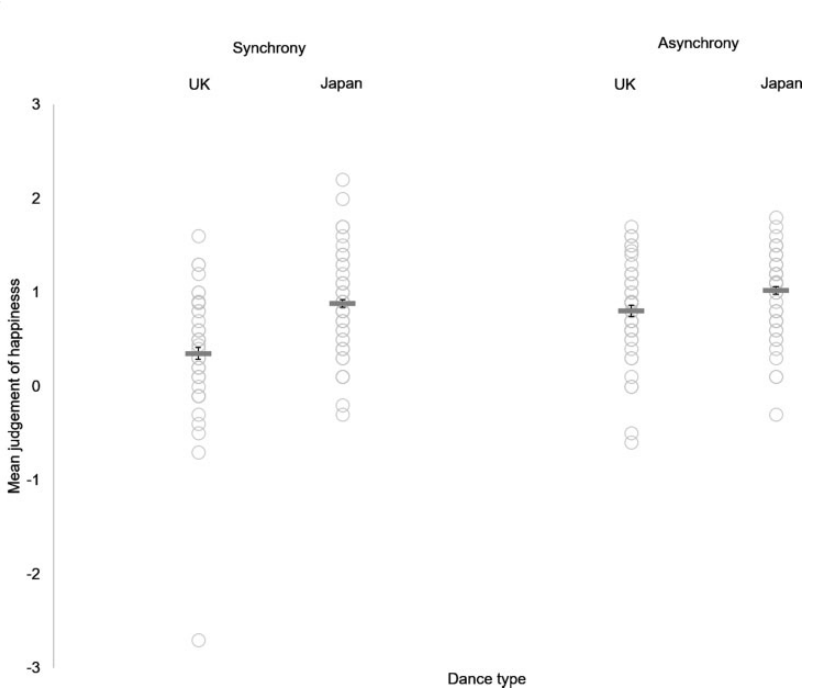

Figure 5. Mean Judgement of Happiness for Synchronous and Asynchronous Dance in British and Japanese Participants. Dots represent data points. Grey horizontal lines represent mean values. Error bars represent SEM. The x-axis depicts the dance type (synchronous or asynchronous) presented to both samples (British and Japanese). The y-axis depicts mean scores of happiness ratings, ranging from −3 (sad) to 3 (happy).

Discussion

The aim of the present study was to examine cultural differences between Eastern and Western cultures in aesthetic perception of joint actions in dance. Regarding the British sample, our findings are consistent with the idea that aesthetic perception of group movement in dance relates to the social signals that are conveyed via the dynamics of group actions (Hagen & Bryant, 2003; Vicary et al., 2017). Partially supporting our main hypothesis, we found a significant interaction between British and Japanese respondents regarding aesthetic preference for synchrony and asynchrony. British participants significantly preferred asynchronous dance to synchronous dance. However, Japanese participants equally liked synchronous and asynchronous dance videos.

Also, as hypothesised, we found that both cultures perceived synchronous dance as more calming, uniform, and familiar. In contrast, both cultures perceived asynchronous dance as more exciting, diverse, and unfamiliar. In the

specific case of judgements of familiarity, and despite the fact that most of the displayed dance videos had Western roots (e.g., ballet, contemporary dance), synchrony was judged more familiar than asynchrony for both cultural groups, suggesting that synchronous dancing is more common than asynchronous dancing in both cultures. British participants were more familiar with both dance types, in comparison to Japanese participants.

In relation to judgements of variety, control, and obviousness, we found that synchrony carries culturally specific meanings that might help to explain the observed cultural differences. As expected, both samples perceived asynchrony as more varied. However, in British participants this judgement was more extreme. This is, compared to Japanese participants, British respondents perceived synchrony and asynchrony as more varied and more repeated, respectively. Cultural differences were also apparent in judgements of control and obviousness. British participants perceived asynchronous dance as more controlled than Japanese participants. In turn, Japanese respondents judged synchronous dance to be more obvious than asynchronous dance, whereas for British participants, both types of dance appeared equally obvious.

In addition, we measured judgements of happiness to explore potential cultural differences in the perception of such emotions when watching synchronous and asynchronous movements. Both cultural samples perceived more happiness in asynchronous dance than in synchronous dance. However, Japanese participants perceived more happiness in both dance types. When comparing both cultural groups, British participants perceived more happiness in asynchronous dance than in synchronous dance. In turn, Japanese participants did not perceive significant differences in happiness between asynchronous and synchronous dance videos. These specific findings contrast with previous philosophical accounts that conceptualise the characterisation of sad emotions in Japanese aesthetics (Keene, as cited in Odin, 2016; Odin, 2016). However, such differences could be due to the distinct nature of the philosophical analysis, which has been based on traditional visual arts and design, and, in contrast, here we have an empirical study analysing a contemporary sample that is appreciating dance movements.

These significant interactions found in judgements of variety, control, obviousness, and happiness may be interpreted from the conceptual framework of holistic and analytic styles (Masuda & Nisbett, 2001; Miyamoto et al., 2006), since they might reflect a different approach to the observation of the dance scenes. In this matter, it is particularly interesting the interaction in judgement of obviousness. For Japanese participants, synchrony is more obvious than asynchrony, possibly because they are adopting a holistic style, observing the whole movement that can be perceived in a synchronous choreography only, whereas British respondents find similar obviousness between synchrony and asynchrony dance, since they might be adopting an analytical style, focusing on

each individual dancer, without looking for a shared choreography. However, further research is needed to test such interpretation.

In sum, we propose that aesthetic perception of dance may provide a window into socio-cultural values. In line with previous cross-cultural comparisons between Eastern and Western societies (Ishii et al., 2014; Kim & Markus, 1999; Masuda et al., 2008; Nand et al., 2014), our study shows culture-specific aesthetic preferences comparing British and Japanese participants. These cultural differences were also apparent in semantic differential perceptions for synchronous and asynchronous movements.

Our findings are therefore consistent with the notion that Western societies emphasise analytic appreciation of specific objects or in our case – people (Masuda & Nisbett, 2001; Miyamoto et al., 2006). In synchronous movement, a visual gestalt emerges from the collective movement of individuals, representing the group as a whole (Arnheim, 1974). In contrast, asynchronous collective movement emphasises specific movements of individual people, but does not produce a visual gestalt of group movement.

Conceivably aesthetic preferences for specific video clips may also depend on other factors than group synchronous or asynchronous movement, most notably familiarity with the dance moves on display or specific preferences for the performers themselves. This corroborates findings from a previous study on live dance performances, in which synchrony was the best predictor of enjoyment ratings, over and above the influence of overall movement acceleration and visual displacement of the performers (Vicary et al., 2017). In this study continuous aesthetic ratings showed that people prefer asynchrony in some sections of the performance, and synchrony in others, yet in both cases a change in synchrony predicted a change in enjoyment (Vicary et al., 2017). Culturally specific associations with synchrony may be one factor that determine whether the relationship between synchrony and enjoyment is positive or negative.

Our study identifies group movement as a putatively universal signal of aesthetic appreciation of the performing arts. Synchronous movement does not only produce pro-social behaviour in performers (Wiltermuth & Heath, 2009), but communicates group cohesion to spectators of the performance (Hagen & Bryant, 2003; Lakens & Stel, 2011; Tang Poy & Woolhouse, 2020). British participants showed preferences in relation to how a group of performers danced. The direction of this influence was dependent on cultural background in the case of the British sample. In this case, our findings support aesthetic theories that emphasise context-specificity and individual differences as a key factor of aesthetic appreciation (Bullot & Reber, 2013; Leder & Nadal, 2014). Thus, our study suggests that aesthetic judgements might be dependent on cultural background.

In conclusion, we explored whether aesthetic perception of movement synchrony or asynchrony is influenced by cultural differences, where we infer a more local or analytic attentional focus in British participants, previously

reported for the aesthetic perception of static visual scenes, drawings, and photographs in participants from Western cultures. Future studies on synchrony/asynchrony perception should further explore the extent to which such preferences relate to personality traits and measures of cultural identity.

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