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Olympic Swimming and Individualism: Can Culture Influence Performance in the Olympic Arena?

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Individual and relay scores in two Olympic swimming events (100- and 200-meter freestyle) were compared across 15 nations, 86 athletes and four summer Olympics (1996, 2000, 2004, 2008) to determine if level of individualism of the home country affects race times. Except in very specific and apparently random circumstances, differences between mean solo race times and mean relay race times were not related to level of individualism, regardless of gender, event or year of Olympics. Explanations for these surprising results center around the high identifiability, drive arousal and performance expectations of the athletes.

The swimming events of the 2008 summer Olympics held in Beijing, China resulted in 25 new world records and 65 Olympic records. While these numbers may seem astounding, viewers of the Olympics often claim (anecdotally) that there is a special quality to the performance of the participating athletes that, more often than not, allows them to beat their personal best scores and/or establish world records during competition. Similarly, the pride these athletes feel to be representing their countries at such a prestigious event makes both their wins and their losses that much more meaningful. This sense of belonging and national pride does, however, appear to be displayed differently among the countries invited to attend and may also affect the athletes' explanations of agency. Markus, Uchida, Omoregie, Townsend, and Kitayama (2006) suggest that these differences in the construal of agency lead American athletes to explain their performance in terms of positive personal characteristics, while Japanese athletes explain their performance in a context that includes personal attributes, background, and the social and emotional experiences they have had.

The present endeavor was an attempt to examine the above anecdotal and empirical observations by comparing the performance of athletes from 18 nations on individual and relay freestyle swimming events to determine if one specific cultural construct does, in fact, predict performance differences. The construct under investigation was Hofstede's (1980, 2001) measure of individualism/collectivism (IC). To date, no research has been published which examines the effect of this cultural construct on Olympic performance, however Sorokowski (2009) found collectivist athletes to achieve better results in sprint relays than did individualist athletes – though no mention is made of the venues in which these relays took place. Similarly, the examination of swimming events is not new. Williams, Nida, Baca and Latané (1989) found swimmers performed more poorly in relay conditions than in individual conditions when their identifiability was low, but that performance was significantly better in relay conditions when they were highly identifiable. Again, however, these data were not collected in an Olympic venue – where every athlete is highly identifiable in any event.

In fact, past research examining the effects of culture on performance in the Olympics is very limited. Other psychological constructs of interest which have been found to specifically affect the performance of the athletes have included counterfactual thinking and prior personal performance expectations (Medvec, Madey, and Gilovich, 1995; McGraw, Mellers & Tetlock, 2005); psychophysiological correlates of success in training (Bundzen, Korotkov, & Korotkova, 2005); the home advantage (Bundzen, Kortkov, Korotkova, Mukhin & Prihatkin, 2005); motivational processes (Mallet & Hanrahan, 2005); and coping strategies and emotional responses (Pensgaard & Duda, 2003). To date, however, no study has been published in which cultural mediators are examined as predictors to performance.

Hofstede's Cultural Dimensions

The study of the influence of culture on an individual's (or a social group's) development, values, ideology, etc. has a long tradition of formal research in many fields (e.g., Mead, 1967; Tönnies, 1887/1963). However, it wasn't until Hofstede's (1980) cross-cultural comparison of IBM employees that the cultural dimensions of individualism/collectivism, power distance, masculinity/femininity and uncertainty/avoidance were

formally introduced into the social psychological community. In later research, Hofstede provided index-score estimates for a total of 69 countries and regions on each of these dimensions (Hofstede, 2001). Although there has been some controversy surrounding the validity of the measurement of these dimensions (most notably Oyserman, Coon & Kimmelmeier, 2002), researchers in various disciplines continue not only to argue for the validity of the constructs (Schimmack, Oishi & Diener, 2005; Triandis, 2001), but they continue also to use them as predictors of cultural differences (e.g., Darwish, 2005).

Among the earliest to suggest that group vs. individual performance may be mediated by collectivism/individualism were Early (1989) and Gabrenya, Wang, and Latané (1985) who found that collectivists will tend to improve their performance when working for a group goal (vs. working solo), and Latané, Williams & Harkins (1979) who found that collectivists will tend to improve their performance when working as an individual for his/her own goals. Meta-analytic examination of the effect has yielded no clear predictive relationship between coaction and cultural orientation (Bryant, 2002).

The current study is thus a simple examination of the coaction performance effect as mediated by one specific cultural dimension within the global arena of Olympic performance.

Specifically, it was predicted that swimmers from nations that traditionally score high in individualism would evidence faster individual race times than relay times; while swimmers from nations that traditionally score low in individualism would evidence faster relay race times than individual times. In the first instance, the athlete would be seeking personal glory; in the second, team glory.

Method

Data were collected for male and female 100-meter and 200-meter solo and relay freestyle swimmers participating in the 1996, 2000, 2004 and 2008 Summer Olympics. These data are available from various official Olympic websites that report times and medal counts (e.g., CBSSportsLine.com, <http://en.beijing2008.cn/sports/swimming/index.shtml>, etc.). An athlete's performance times were included in the analyses only if (1) the relay times were the actual individual relay times of the four swimmers rather than the overall times divided by four and (2) the country for which they were competing was also one of the countries Hofstede (2001) included in his index-score listing. Five countries were excluded from the final analyses (Nigeria, Kenya, Trinidad and Tobago, Jamaica, and the European Unified Team) because they did not meet this second criterion. Each athlete could be included more than once within the sample. That is, the same athlete may have yielded includable data (solo vs. relay times) for more than one event per year, and more than one year. Each time an athlete yielded a solo vs. relay time pairing, the sample size grew by one. However, because some athletes participated in the same event across different years, their scores were averaged to yield one score per athlete per event. This yielded a total of 86 athletes for whom solo vs. relay race data could be included in the final dataset.

A total of 15 nations and 86 athletes (45 males, 41 females) were represented in the final database. Across the four summer Olympic years, 36 includable athletes competed in the 1996 Olympics, 20 athletes competed in the 2000 Olympics, 22 athletes competed in the 2004 Olympics and 22 athletes competed in the 2008 Olympics. (Fourteen athletes participated in the same event in more than one year and therefore increase the number

of athletes per year, but do not increase the overall count of athletes.) Overall, there were 51 athletes who competed in the 100-meter events and 49 athletes who competed in the 200-meter events, but again, due to repeat participation in events, the final count remains at 86 athletes.

A country's individualism/collectivism index scores (IC) were taken from Hofstede (2001). They are as follows: The United States (91), Australia (90), Great Britain (89), the Netherlands (80), Italy (76), France (71), Sweden (71), Germany (67), South Africa (65), Japan (46), Russia (39), Brazil (38), Romania (30), China (20). The most highly represented countries were the United States (21.8% of all includable athletes) and Australia (17.9% of all includable athletes).

Results

Event, Gender and Year Effects

Paired comparison tests were conducted to examine overall differences in mean solo vs. mean relay race times for each event and gender across the four Olympic years. For females, there were no significant differences in solo vs. relay race times, regardless of event ($ps > .05$). For males, there was no significant difference in solo vs. relay race times in the 200m event, but the average relay race time ($M = 48.77$, $SD = .78$) was significantly shorter than the solo race time ($M = 48.16$, $SD = .96$) in the 100m event ($t(22) = 6.019$, $p < .001$, $d = .70$). See Table 1 for all mean race times.

Table 1: Means and standard deviations for solo vs. relay race times collapsed across year.

Males				Females			
100m		200m		100m		200m	
Solo	Relay	Solo	Relay	Solo	Relay	Solo	Relay
48.77	48.16**	107.61	107.34	54.66	54.66	118.91	118.60
(.78)	(.96)	(1.62)	(1.69)	(.83)	(2.20)	(1.80)	(1.96)

** denotes significant differences at the $p < .001$ level.

Individualism/Collectivism

Difference scores were calculated for each athlete's solo and relay race times. These difference scores were correlated with IC to determine whether a relationship exists between the athletes performance (i.e., whether their solo races times were faster or slower than their relay race times) and the level of individualism/collectivism of the country they represented. No significant overall relationship was revealed between these variables ($ps > .05$), nor was there any relationship between these variables when the data were grouped by gender ($ps > .05$). When grouped by year, a significant relationship emerged only for 2008 ($r(18) = .46, p < .05$), such that athletes from countries with higher IC scores also had higher difference scores. Thus, for 2008, as IC increases, the difference between relay times and solo times becomes more pronounced, with the relay times consistently faster than the solo times. It should be noted, however, that in 2008, none of the includable athletes were from the more collectivistic countries (i.e., China, Russia, Brazil and Romania).

Countries were also examined individually by gender and event (collapsed across year). Although the sample sizes become very small and the patterns must be interpreted with caution, corresponding trends to those mentioned above are revealed. Specifically, females from the Netherlands (IC = 80) had significantly shorter average relay race times ($M = 54.04, SD = 1.26$) than solo race times ($M = 54.98, SD = 1.04$) in the 100m event ($t(3) = 3.38, p < .05, d = .81$), but, for females in the 200m event, none of the countries evidenced significant differences in mean solo vs. relay race times. For the 100m event, males from Australia (IC = 90) had significantly shorter average relay race times ($M = 47.99, SD = .79$) than solo race times ($M = 48.54, SD = .93; t(4) = 3.73, p < .05, d = .64$). Also for the 100m event, males from Sweden (IC = 71) had significantly shorter average relay race times ($M = 47.69, SD = .62$) than solo race times ($M = 48.76, SD = .63; t(1) = 109.00, p < .05, d = 1.71$). Finally, in the 200m event, males from Great Britain (IC = 89) had significantly shorter average relay race times ($M = 107.89, SD = 1.34$) than solo race times ($M = 108.70, SD = 1.18; t(4) = 3.39, p < .05, d = .64$). Although athletes from the United States of America comprised over 20% of the sample, solo and relay times were not significantly different, regardless of gender or event ($ps > .1$).

Discussion

Although solo vs. relay race times were revealed to be different in certain very specific contexts (e.g., for males in the 100-meter event, whose home country is high in individualism, but only if that country happened to be Australia or Sweden), this pattern was not consistent across all countries which score high or low in IC, nor were any consistent gender patterns revealed. This indicates that level of individualism of an athlete's home country has no effect on solo vs. relay race times and is contrary to what was hypothesized and what was uncovered by Sorokowski (2009). Instead, mean solo race times were (generally non-significantly) slower than individual relay times, regardless of gender, event, year or level of individualism. Swimmers from nations ranked lower in individualism did not evidence faster relay race times than individual times. In all cases of a significant difference between solo and relay times, the solo times were slower than the relay times. Although culture may affect how athletes explain their performance (Markus, et al., 2006), it does not appear to interact with coactive performance to produce meaningful and discernable improvements

or decrements.

In an arena as public and publicized as the Olympics, each athlete is highly identifiable and the stakes are high. Thus, the best explanation for these findings may come from Williams, Nida, Baca and Latané (1989). Recall they found swimmers to perform significantly better in relay conditions when athletes were highly identifiable. Although highly identifiable, the athletes in the current study did not seem to swim faster for the relay event as compared to the solo event, except in very limited cases. Instead, perhaps the athlete's superordinate team is always the country team, and being a part of a 4-person group of swimmers who are competing in a relay cannot result in any greater output of effort than while racing solo. In effect, high identifiability serves as an equalizer, exerting greater influence than the socialization which may have lead to an athlete's or a country's level of individualism and perhaps producing a ceiling effect on performance.

Moreover, team cohesion and social loafing have also been found to be negatively related in relay swimming events (Everett, Smith & Williams, 1992), such that a team with a stronger group identity will evidence less loafing. In the Olympics, it may be argued that all teams have a strong group identity, and therefore loafing while in a relay is completely unacceptable. Again, the effect of being on the world stage as a representative of your country influences an athlete's performance more strongly than any tendencies toward individualism/collectivism which the athlete may have internalized.

Finally, drive arousal theory (e.g., Zajonc, Heingartner, & Hermann, 1969) predicts that performance on a well-learned task should improve as arousal increases. It can be assumed that these athletes are feeling considerable arousal and that their skill is a result of many hours of practice. Whether or not they feel more arousal in a group (relay) vs. as individual racers is unknown. But again, it is likely that arousal will increase with the fear of being seen as the one team member who couldn't perform well enough to help the (country) team win another medal. Thus, they will perform well regardless of the event.

It must, at this point, be noted that not all athletes compete for their home country. For example, Olympic gold medalist Lenny Krayzelburg competes for the United States, but he was born in the Ukraine and lived there for the first fourteen of years of his life. The assumption that all U.S. athletes are high in individualism is also, at best, an assumption—even if they were born and raised in the United States. As suggested by Triandis, Bontempo, Villareal, Asai and Lucca (1988), there are limits to the cultural construct of individualism/collectivism that do not take into account the individual differences between people who happen to live in the same culture. Further examination of the effect of culture on performance should therefore perhaps center on a more specific examination of the allocentric (the individual's more collectivistic tendencies) and idiocentric (the individual's more individualistic) tendencies of the individual performers. Alternately, it would be interesting to examine only those athletes who have lived the majority of their lives in the country for which they compete. Doing so, however, would severely restrict an already small sample size and does not guarantee that all athletes from an individualistic culture would score high in individualism (or vice versa for collectivists).

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