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The Importance of Importance in the Physical Self: Support for the Theoretically Appealing
but Empirically Elusive Model of James

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Abstract

This study tested James theoretical assumption that the importance people attribute to different physical self-domains in combination with perceived competence in those domains, influences higher order self-concepts. Data from four large samples (total n =1831) from Sweden, Great Britain, Portugal and Turkey were analysed. A new version of an instrument, the Physical Self Perception Profile-Revised (PSPP-R), was used to measure perceived competence, and importance of physical self-domains, along with global self-esteem. Competence-importance interactions contributed significantly to higher order self-concepts in three of four PSPP-subdomains. The same result was found in the structural equation modeling analyses and latent interaction analyses. Idiographic analyses showed that domains rated as intraindividually more important explained more global self-esteem variance compared with less important domains. In general, support for James hypothesis was found across the different analyses. Differences between the methodology and results in the present study compared with previous studies are discussed.

Keywords: competence, discrepancy, importance, physical self, self-esteem

The Importance of Importance in the Physical Self: Support for the Theoretically Appealing but Empirically Elusive Model of James

A central issue in self-esteem research literature remains the identification of mechanism of self-esteem formation and change. This can be traced back to William James (1890), who suggested that *Self-esteem = Success / Pretensions* “. In other words, James proposed that the importance people attribute to the areas or domains of evaluation in life, in combination with the evaluation itself, influences how events and situations will affect self-esteem (James, 1890). Also, James suggested that only evaluations in domains in which people have staked their worth will contribute to overall feelings of self-worth or global self-esteem. To use his words: *“I, who for the time have staked my all on being a psychologist, am mortified if others know much more psychology than I. But I am contented to wallow in the grossest ignorance of Greek. My deficiencies there give me no sense of personal humiliation at all. Had I 'pretensions' to be a linguist, it would have been just the reverse”* (p. 200). His early theory of the self, labeled the individual importance hypothesis, has later been reiterated from different perspectives by several scholars, for example Harter (1986, 1989,1993,), Marsh (Marsh, 1986, 1993, 2008), Pelham (Pelham, 1995a; Pelham & Swann, 1989) and more recently Crocker and colleagues (Crocker, 2002; Crocker & Wolfe, 2001).

Modern Applications of James' Theoretical Framework

The active attachment of low importance to low competence areas has been termed “discounting”, and regarded as a self-serving mechanism (Harter, 1986). Harter (1986) also

proposed that self-esteem is a function of discrepancies between actual domain ratings and domain importance ratings. Across numerous studies on older children, adolescents, college students, and adults, Harter found that actual-importance discrepancy scores were negatively related to esteem (Harter, 1986, 1989, 1993). However, methodological weaknesses in the analytical approach of Harter have been identified. For example, discrepancy scores have a tendency to be less reliable and there are also uncertainties in terms of the interpretation of two separated constructs when merged into one (Byrne, 1996). Moreover, Harter used quite simple analytical approaches, such as correlational patterns of scores between self-esteem and discrepancy scores, and did not show evidence of discrepancy scores being able to explain more self-esteem variance compared with just competence ratings (Marsh, 1993).

Marsh (1986, 1993) systematically evaluated James individual importance hypothesis in a number of studies. First he concluded that simple unweighted ratings of competence in self-concepts were more robustly related to global self-esteem compared with competence ratings that are weighted by importance scores in various forms, providing evidence against James individual importance hypothesis. Moreover he used a generalized multiple regression approach in which global self-esteem was predicted by competence ratings, importance ratings and competence x importance cross product terms. The results would support the model if the competence-importance cross products contributed uniquely to the global self-esteem variance beyond the competence and importance ratings. Using this criteria, Marsh also failed to find support for both James individual importance hypothesis and Harters discounting model in both studies.

The analytical approaches used by Marsh (1986, 1993) and Marsh and Sonstroem (1995) have been criticized by different scholars. For example, Pelham and Swann (1989) suggested that the limited evidence for the importance subscales found by Marsh may be partially attributed to the use of the inter-individual (nomothetic) approach that fails to

account for intra-individual (idiographic) relationships between importance, competence, and global self. They advocated a *differential importance* approach, defined as: “...*the amount of importance people impute to particular attributes relative to their other attributes*” (p. 674). Using this approach, they found that the differential importance index contributed to global self-esteem more strongly than the self-views only and that this effect was stronger for people with relatively negative overall self-esteem.

Marsh (1993, 1995) contended that the support for James’ perspective as operationalized by Pelham and Swann (1989) and Pelham (1995a) still was “surprisingly weak” when compared to the predictive power of group or normative ratings of importance and limited to a small number of domains. Pelham (1995a, 1995b), after having re-analysed the data, claimed stronger support for their interpretation of the James model.

In support of the Pelham and Swann intra-individual analytical approach, Hardy and Moriarty (2006) recently found that the competence ratings of the three intra-individually most important domains of the Self-Description Questionnaire for each individual, predicted substantially more variance in global self-esteem compared with the three least important domains. Hence, when using intra-individual analyses, stronger support for the importance hypothesis was gained. When they used Marsh’s (1986, 1993) multiple regression model approach, no support for the importance hypothesis was found. Based on the assumption that domains that are discounted should demonstrate high correlations between levels of competence and importance but lower correlations between competence level and global self-esteem, they found evidence for strong discounting in some domains, in particular those that were rated as less important by the majority (e.g., Religion/Spiritual Values). Marsh (2008) replied and re-analysed the data of Hardy and Moriarty according to his approach and again found evidence against James hypothesis. Similar to his earlier critique in the debate with Pelham (Marsh, 1993,1995), he again contended that the support for the relevance of

importance ratings on global self-esteem was more evident when basing the data on total-group scores (normative approach) compared with an intraindividual approach, speaking against James hypothesis. In a reply to this critical evaluation of Marsh, Hardy and Leone (2008) reported a number of concerns about Marsh's methods and claimed that they do not constitute a valid test of James hypothesis. For example they contended, as also suggested earlier by Hardy and Moriarty (2006), that the multiple regression approach may not be able to detect significant interactions due to saturation and ceiling effect and that it is problematic due to multicollinearity. On a broader level, they further argued that the approach of Marsh and his interpretation of, James' individual importance hypothesis is too strict, narrow and mathematical.

The Individual Importance Hypotheses in the Physical Self

With the recognition of multidimensionality of the self, the content and function of the physical aspects of the self have been widely investigated (Fox, 1997; Marsh, 1997). The physical self has been defined as an individual's perceptions of himself/herself in the physical domain. It has been given a high priority in the study of self as the physical self represents the public face of the individual. Physicality itself has several components or subdomains of physical competencies and appearance such as perceptions of strength, endurance, sport ability, and body image (Fox & Corbin, 1989). The physical self has been shown to be an important contributor to overarching global perceptions of self-worth in multidimensional, hierarchical models of self-esteem (Fox, 1997).

The tenets of James and Harter on importance have at least in part been addressed within the physical domain. Fox and Corbin (1989) developed the Physical Self-Perception Profile (PSPP) to assess four subdomains of the physical self and an overarching construct of

physical self-worth (general feelings of happiness, satisfaction, pride, respect, and confidence in the physical self). The hierarchical organisation of this model has been replicated in many populations worldwide (e.g., Hagger, Lindwall & Asci, 2004; Lindwall, Asci & Hagger, 2009). Following the lead of Harter (1986), a Perceived Importance Profile (PIP) was included in the measure that allowed individuals to assign importance weights to each subdomain of the physical self (Fox, 1990). Perceived importance was hypothesised to serve a 'filtering' role between components at subdomain and higher levels of the hierarchical model. Fox (1990) also found empirical support for the role of importance weights. As the domain factor of physical self worth has been found to mediate the relationship between subdomain factors and higher order factors such as global self-esteem (Fox & Corbin, 1989), it may be relevant to include the physical self worth factor also in analyses that examine the effect of competence X importance interactions on global self-esteem.

The theoretical basis of the Fox and Corbin model was evaluated by Marsh (1994). He tested the importance hypothesis (labelled as the importance weighted average model) using his Physical Self-Description Questionnaire, an alternative to the PSPP. Consistent with the two previous works of Marsh focusing on the academic domain (1986, 1993), results demonstrated that the effect of any subdomain on global physical self did not vary with consideration of the importance weights of specific subdomain. In a second study, Marsh and Sonstroem (1995) assessed the contribution of PIP importance ratings to the association between PSPP components and global self-worth using the original PSPP and PIP scales. Although they used the same instruments as Fox and Corbin (1989), they failed to find support for added value of importance of subdomains of the physical self in the prediction of self-esteem using the Fox and Corbin (1989) hierarchical model. The contrasting results of Marsh and Sonstroem (1995) and Fox and Corbin (1989) may be due to differences in sample properties or analytical approach. Fox and Corbin included male and female undergraduate

students and used correlational analyses whereas adult female aerobic dancers and a generalized multiple regression approach were used by Marsh and Sonstroem.

Methodological Shortcomings in Previous Research

The different interpretations of data and hence different amount of claimed support for James' theory, may to a large extent be explained by methodological weaknesses in published studies, previously highlighted in several papers (e.g., Hardy & Moriarty, 2006 Hardy & Leone, 2008; Marsh, 2008; Pelham, 1995a, 1995b). In general three issues may be identified. First, a problem generally found in competence-importance research, in regard to both the physical self and other domains, is the use of short and unreliable single item (as in SDQ-III, the PSDQ) or two-item (e.g., the PIP scale accompanying the PSPP) scales when measuring importance ratings, which constitutes an evident psychometric liability (Lindwall & Hassmén, 2004; Marsh & Sonstroem, 1995). Linked to James' equation (Self-esteem = success/prentensions) Hattie (2000) stated that: "...since James' writings, we have been most successful measuring and understanding the numerator, know somewhat less about the denominator, and have had little success at putting the two together" (p.54). Similarly, Marsh (1995) concluded: "I now suspect that the critical problem is in the way that importance is inferred by the use of simplistic importance ratings. It remains the role of future research to devise, operationalize, and critically evaluate alternative approaches to inferring importance..." (p.1159). Secondly, most previous studies have included samples from one culture or country, primarily Anglo-Saxon countries, which may have constrained findings due to lack of variance.

Thirdly, previous studies have used analytical tools (e.g., traditional regression analyses) that are not able to separate measurement error from true scores. Using structural

equation modeling (SEM) and latent variables based on multiple indicators affords a stronger analytical approach and provide relevant advantages towards traditional methods (e.g., Scalas & Marsh, 2008). Most importantly, the unreliability and measurement error of the factors are controlled. As measurement error may lead to lower statistical power (e.g., Jaccard & Wan, 1996), SEM that uses latent interaction analyses have been warranted, for example by Marsh (2008). The only previous study, to our knowledge, that has utilised SEM methodology when investigating James individual importance hypothesis is Scalas and Marsh (2008). However, rather than targeting importance and competence interactions, they examined actual – ideal discrepancy. Also, they only used one physical subdomain, appearance, and did not conduct latent interaction analyses. Moreover, the risk of multi-collinearity due to the number of independent variables in the generalised multiple regression approach has been highlighted (e.g., Hardy & Leone, 2008).

The Present study

We argue that some of the contradictory results found in previous research on James individual importance hypothesis may be explained by small and homogenous samples, instruments with weak psychometric properties, models built on nomothetically-derived importance scores and analyses that failed to estimate measurement error.

The present study aimed at overcoming these methodological shortcomings and extending previous work by adopting (a) a range of large samples from heterogenous populations in terms of age, background (e.g., high-school students to middle-aged regular gym-users) and culture (e.g., samples from four different countries), (b) a newly developed instrument with more items per subscale that more reliably captures importance ratings; (c) a comprehensive range of analytical approaches that examine data from both nomothetic and

idiographic perspective and that manage to model measurement error through SEM and latent interaction analyses.

The purpose of the study was therefore to investigate James' individual importance hypothesis in the physical self-domain in a diverse sample from different countries. More specifically, we investigated whether or not the importance attached to specific components of the physical self-concept affect the degree to which the perceived competence of those components relate to global self-esteem based on: (a) the generalized multiple regression approach of Marsh (1986, 1993); (b) SEM and a latent interaction approach; (c) the intra-individual approach of Pelham and Swann (1989) and Hardy & Moriarty (2006). Finally, we examined if any of the subdomains displayed a pattern of discounting, according to the approach of Hardy & Moriarty (2006). Five hypotheses were derived: (a) competence-importance interactions will contribute significantly to global self-esteem and physical self worth variance beyond competence and importance ratings when using the multiple regression analyses approach; (b) latent interaction factors based on competence and importance item crossproducts will have significant effects on a global self-esteem latent factor in SEM-models where also the domain factor physical self worth is included; (c) latent models that include latent factors of competence ratings, importance ratings and competence-importance interaction will make better fit to data compared with models without the latent interaction; (d) domains that are intra-individually rated as more important will predict more global self-esteem variance compared with domains rated as less important; (e) subdomains rated as less important (i.e., the Sport and Strength subdomains) will show the strongest tendency for discounting, indicated by a high correlation between competence and importance ratings and lower relation between competence rating and global self-esteem.

Method

Participants

Several samples were recruited from four different countries. These countries are geographically spread, ranging from the northern Europe (Sweden), western Europe (Great Britain), south-western Europe (Portugal) and Middle-East (Turkey), and provide cultural variability . The recruitment strategy was to include a wide range of participants, with regard to age, culture and interest in exercise, which would lead to diverse samples. Hence, the samples include university students from Great Britain (283 females, M age = 21.38, SD =2.62; 212 males, M age = 22.04, SD =4.19, and Turkey (344 females, M age = 20.55, SD = 1.85; 288 males, M age = 21.61, SD = 2.36), high-school students from Portugal (237 females, M age = 16.49, SD = 1.04; 223 males, M age = 16.71, SD = 1.31), and university students and health club members from Sweden (156 females, M age = 36.26, SD = 14.18; 88 males, M age = 35.02, SD = 15.11).

Materials and Procedure

Self-Perceptions and Importance Ratings.

The PSPP has demonstrated high validity and reliability as a measure of perceptions of the physical self (Fox, 1998; Hagger, Asci & Lindwall, 2004). However, the idiosyncratic alternative response format has been difficult to understand for some participants. To overcome this shortfall, a revised version of the PSPP (PSPP-R) featuring a four-point likert response format with all items positively worded to avoid method effects was used in this study even though this may increase social desirability. Also, because the original PIP features only two items per subscale and has demonstrated poor reliability (Fox, 1990), this was increased to 6 items per subscale. The PSPP-R therefore comprises 60 items, This includes 30 competence or adequacy items, similar to the original PSPP, that make up

subscales of sport competence (Sport), physical conditioning (Cond), body attractiveness (Body), and physical strength (Strength), along with general physical self-worth.. Each competence item has a matched perceived importance item. For example, a perceived sports competence and its perceived importance item are: “I do very well at all kinds of sports“and “How *important* is it to you that you do well at all kinds of sports?”

Language specific versions of the PSPP-R for administration to the Swedish, Turkish, and Portuguese samples were developed using the back-translation procedure advocated by Brislin (1986). The psychometric properties of the PSPP-R are reported elsewhere (Lindwall, Asci & Hagger, 2007, 2009). However, a brief description is provided here. The model fit results are based on analyses on all four samples merged into one combined sample. A four factor first order model provided good fit with data, both for the competence scales (Sattora-Bentler scaled $\chi^2_{(186)} = 861.49$; CFI = .963; NNFI = .956; SRMR = .031; RMSEA = .046 [.043-.049]) and for the importance scales (Sattora-Bentler scaled $\chi^2_{(186)} = 1199.38$; CFI = .948; NNFI = .934; SRMR = .035; RMSEA = .056 [.053-.059]). Similarly, the second order models, hypothesizing a second-order latent factor, representing physical self worth, to account for the covariances between the original four subdomain factors, also made good fit to data , for both the competence (Sattora-Bentler scaled $\chi^2_{(188)} = 783.75$; CFI = .974; NNFI = .962; SRMR = .032; RMSEA = .043 [.040-.046]) and importance (Sattora-Bentler scaled $\chi^2_{(188)} = 1085.04$; CFI = .953; NNFI = .942; SRMR = .039; RMSEA = .052 [.049-.055]) scales. Factor loadings were high and typically above .65 (median λ for competence scales = .75 and for importance scales = .75). Although the chi-square values for the models are high, the RMSEA and other fit indices indicate well-fitting models. This may indicate that the high chi-square values are due to the large sample size.

Six positively-worded items from the Rosenberg Self-Esteem Inventory (Rosenberg, 1989) provided a measure of global self-esteem.

The instrument was completed after lectures and classes for high school and university students and in gym contexts for gym users in quiet conditions.. Participants were informed about the general purpose of the study (a study on self-perceptions linked to the body and how these relates to attitudes linked to the body and exercise), that their responses would be kept anonymous, the voluntary nature of their involvement, and asked to provide informed consent. The participants were not informed about the specific nature of the hypothesized relationships in the study, for example between discounted domains and lack of competence. To reduce the risk of social desirability, oral as well as written information also included the phrase: “*There are no right or wrong answers, since people differ a lot*”.

Analytical and Statistical Procedures

1. To examine the first research question from a nomothetic perspective, we used Marsh’s (1986, 1993) generalised multiple regression approach where all subdomains are entered in the same model as well as the approach used by Marsh and Sonstroem (1995) where one subdomain at the time is analysed. Support for the importance-weighted average model may be claimed if the competence \times importance cross-products add uniquely to the variance explained in the dependent variable (global self-esteem) beyond that attributed to the competence and importance values alone. To ensure that analyses were unaffected by multicollinearity¹ due to the mutual dependence of the main and interaction terms (Aiken & West, 1991), we developed the interaction terms based on z-transformations of the competence and importance ratings (but did not standardize the product of these terms). Unstandardized beta-coefficients were used and interpreted in the analyses, based on previous recommendations (Marsh, 1986, 1993; Marsh & Sonstroem, 1995). The two main dependent variables, Global Self-Esteem and Physical Self-Worth (physical self worth), were predicted from three sets of variables. In the first set of analyses all four subdomain competence ratings

were entered in the first step, all importance ratings in the second and all competence-importance interactions in the final step. In the second set of analyses, first the competence rating for one subdomain was entered, then its corresponding importance rating, and finally the competence \times importance interaction.. Four (one for each subdomain as predictor) regression analyses were conducted predicting global self-esteem and four predicting physical self worth . Due to multiple comparisons, Bonferoni adjustments were performed, resulting in a critical p-value of .00625 (.05/8) for analyses with global self-esteem and physical self worth as criterion variables. Simple slope analyses were conducted to interpret the results of any potential significant interaction effect (Aiken & West, 1991).

2. To be able to make full use of the multiple indicators of the competence and importance scales and to control for measurement error, we carried out SEM path-model analyses. To take into account the potential mediating effect of the physical self worth factor in the relationship between competence X importance interactions of subdomains and global self-esteem we included competence and importance factors of the four PSPP-R subdomains as well as the physical self worth and global self-esteem factors in these models. The measurement model for the competence and importance factors consisted of the six PSPP-R items that measure competence or importance for that subdomain. Six items each were also used as factor indicators of the physical self worth and global self-esteem factors. Similarly to the procedure used for the regression approach, we standardized the items. The factor indicators for the interaction factor were the six crossproducts of the matched standardized competence and importance items (e.g., Sport Competence item 1 was multiplied with Sport Importance item 1). For each subdomain, the three latent factors of competence, importance and competence X importance were specified to have direct effects on the domain factor physical self worth as well as global self-esteem (see Figure 1). Given the potential mediating role of physical self worth this factor was also specified to have direct effect on global self-

esteem aside from being affected by competence, importance and competence X importance interaction factors for each subdomain. Aside from the direct effect of the latent competence X importance factor for each subdomain on global self-esteem, we also specified an indirect effect from the interaction factor on global self-esteem through physical self worth. We investigated the direct effects, indirect effects and total effects (direct plus indirect effects) of the latent interaction factor for each subdomain on global self-esteem. We conducted these analyses separately for each of the four subdomains. However, we did not perform analyses on all the subdomains simultaneously in the same model (as recommended in Marsh's generalised –importance weighted analysis) because we deemed this model overly demanding. To avoid problems associated with non-normality of the cross-product indicators, we followed the recommendations in previous work (e.g., Kenny & Judd, 1984) and used a model with non-linear constraints. More specifically, we chose to use the distribution free approach to interaction effects suggested by Coenders and colleagues (Coenders, Batista-Foguet, & Saris, 2008). We used the maximum likelihood parameter estimates with robust standard errors (MLR) included in Mplus 4.0 (Muthén & Muthén, 1998-2006). Following the recommendations of correlating uniqueness for parallel items that share a big proportion of their phrasing/content (e.g., Marsh, 2007), we correlated the uniqueness between competence items and their respective importance items for which the phrasing was very similar (e.g., “I do very well at all kinds of sports“ versus “How *important* is it to you that you do well at all kinds of sports?”).

We also conducted latent interaction analyses using the latent moderated structural equations approach (Klein & Moosbrugger, 2000). This approach is included in Mplus version 4.0. Structural equation models where the latent factors of competence and importance for each subdomain were related to the latent factor of global self-esteem were tested. The same approach was used for physical self worth as the dependent variable. Each

of the three latent factors in the model (subdomain competence, importance and global self-esteem/physical self worth) was based on six indicators (the corresponding six items in the PSPP-R). However, due to the complexity of the latent interaction models and the problem of nonconvergence, we used parcelling to create three parcels (each consisting of two indicators/items) for each latent factor. For each subdomain, this model was then compared with a model adding a latent interaction term between the latent factors of competence and importance. The log likelihood value for the proposed models with and without the interaction term were compared, and a statistically significant value for the $-2LL$ difference given its degrees of freedom (in this case 1) indicates the existence of an interaction effect. The adding of an interaction term in the model requires an analysis type (random) for which the software does not provide the estimation of regular model fit indices. Therefore model fit was examined only in the first baselinemodel without the interaction term.

3. We investigated James individual importance hypothesis from an intra-individual perspective using Pelham and Swann's (1989) differential importance perspective and the more recent application of this approach by Hardy and Moriarty (2006). When investigating James individual importance hypothesis hypothesis from an intra-individual perspective, the most important, second most important, third most important, and least important subdomains of the PSPP-R were identified for each participant. This analytical strategy examined whether domains that are rated as more important (relative to how important other domains are perceived for that person) will have a stronger influence on global self-esteem from an intra-individual perspective. The competence ratings of the most important and second most important subdomains were then entered into a multiple linear regression analysis predicting global self-esteem as the dependent variable together as the first block and the competence ratings of the third most important and least important subdomains as the second block (model 1,2 in Table 5). The order was then reversed (model 2,1). In a second set of analyses,

the competence rating of the most important subdomain was entered first and the least important domain as the second predictor, again predicting global self-esteem as the dependent variables. The order was then reversed. If participants received the same importance score on the second most and third most important domains they were excluded in the first set of analyses. If participants had the same score for the most important and second most important domain, or for the third most important and least important domains, they were excluded in the second set of analyses.

4. To investigate prevalence of discounting, we used the simple correlation strategy utilised by Hardy and Moriarty (2006). When investigating which subdomains were discounted, we looked at correlations between the different subdomains, their importance ratings and global self-esteem. Correlations between competence and importance ratings in subdomains that are discounted will be high and the correlation between competence and global self-esteem will be correspondingly lower.

Results

Descriptive statistics and Cronbach alpha values for the PSPP-R for each of the subsamples are shown in Table 1. Cronbach alpha as well as composite reliability for the PSPP-R factors was stable with values above .80 for both competence and importance scales. All the following analyses are based on the combined data from the four samples.²

The individual importance hypothesis and generalised multiple regression analyses

The first hypothesis of the study was that competence-importance interactions will significantly contribute to global self-esteem and physical self worth variance beyond competence and importance ratings. In the first set of analyses (see Table 2), we entered all competence ratings for all four subdomains in the first step, all importance ratings in the

second step and all competence-importance interactions in the final step. In these more demanding analyses, the interaction scores for all the subdomains contributed significantly ($p < .001$) beyond all competence and importance ratings, explaining in total 1.0% of global self-esteem variance. This interaction was only significant for the Sport subdomain ($p < .001$). The same results was found when predicting physical self worth; the interaction scores overall contributed significantly beyond competence and importance ratings, but only the Sport subdomain was significant (predicting 0.3% of physical self worth variance).

In the second set of analyses, including one subdomain at the time, importance ratings added uniquely beyond the competence rating to the prediction of explained variance in global self-esteem in all four subdomains. Tables 3 shows that the competence rating for the body attractiveness sub-domain contributed mostly to global self-esteem and physical self worth variance, explaining 30% of the global self-esteem variance and 52.4% of the physical self worth variance. Importance ratings added uniquely beyond the competence rating to the prediction of explained variance in global self-esteem in all four subdomains. In three of four subdomains the importance rating contributed uniquely to the explained variance in physical self worth. In total, importance ratings explained between 0.6 and 1.8% of global self-esteem and physical self worth variance. The competence \times importance interaction terms contributed significantly to the global self-esteem variance (0.5 to 1.8 %) in three of the four subdomains, Sport, Cond and Strength, but not in Body. The same result was found when predicting physical self worth; the competence-importance interactions for Sport, Cond and Strength (but not for Body) contributed significantly beyond competence and importance ratings to physical self worth variance (0.2% to 0.9%). Simple slope analyses revealed the same pattern for all significant interactions (Figure 1a-c). With increased importance there was a stronger relationship between competence and global self-esteem.

To summarise, weaker support for the first hypothesis was found in the first set of analyses; the competence-importance interaction scores together contributed to global self-esteem and physical self worth variance, but only for the Sport subdomain was this interaction significant. In the second set of analyses, strong to moderate support for the first hypothesis was found as competence importance interactions significantly contributed to global self-esteem and physical self worth variance in six out of eight analyses.

The individual importance hypothesis and SEM path analyses

The models provided good fit to data for all the four subdomains: Sport: Yuan-Bentler T2 $\chi^2_{(390)} = 1566.98$; CFI = .947; TLI = .940; SRMR = .040; RMSEA = .040 (.038-.043); Condition: Yuan-Bentler T2 $\chi^2_{(390)} = 1346.22$; CFI = .953; TLI = .947; SRMR = .038; RMSEA = .037 (.034-.039); Body: Yuan-Bentler T2 $\chi^2_{(390)} = 1766.08$; CFI = .933; TLI = .925; SRMR = .047; RMSEA = .044 (.042-.046); Strength: Yuan-Bentler T2 $\chi^2_{(390)} = 1711.21$; CFI = .940; TLI = .933; SRMR = .042; RMSEA = .043 (.041-.045). The effect of the competence factor on global self-esteem was positive and strong for all four subdomains (ranging from $\beta = 0.522$ for Strength to $\beta = 0.741$ for Body). The effect of the importance factor was negative and moderate for all subdomains (ranging from $\beta = -0.248$ for Body to $\beta = -0.325$ for Sport). As described in Table 4, the direct effect of the competence X importance interaction factor on global self-esteem was significant for Sport and Condition and the total effect (direct effects plus indirect effects through physical self worth) was significant for Sport, Condition and Strength. According to the standardized parameter estimates, the total effect of the interaction factor on global self-esteem was strongest for the Sport subdomain ($\beta = 0.187$, $p < .001$) followed by Strength ($\beta = 0.141$, $p < .001$) and Condition ($\beta = 0.137$, $p < .001$). For these three subdomains the direct effects of the interaction factor on physical self worth were also significant. However, the direct effect of the competence X importance interaction factor for

the Body subdomain was not significant on physical self worth or global self-esteem, nor was the total effect of the interaction factor on global self-esteem significant. Overall the SEM path analyses demonstrated support for our second hypothesis for the Sport, Condition and Strength subdomains but not for the Body subdomain.

The individual importance hypothesis and latent interaction analyses

Reliability estimates for the scales based on the parcels were in general very high. Cronbach alpha values ranged from .88 to .86 for all scales. Although the observed chi-square values were high and did not indicate a close fit with data for the proposed baseline models with no interaction term, according to the fit indices, these models made satisfactory fit with data for all subdomains: Sport ($\chi^2_{(21)} = 96.36$, CFI = .992; TLI = .987; SRMR = .023; RMSEA = .045 (.036-.055); Condition ($\chi^2_{(21)} = 117.25$, CFI = .990; TLI = .983; SRMR = .023; RMSEA = .051 (.042-.061); Body ($\chi^2_{(21)} = 235.36$, CFI = .975; TLI = .958; SRMR = .034; RMSEA = .077 (.068-.086); Strength ($\chi^2_{(21)} = 86.25$, CFI = .993; TLI = .988; SRMR = .021; RMSEA = .042 (.033-.052). The third hypothesis of the study was that latent models including a competence importance interaction would result in better fit to data compared with models without the interaction. We found a significant improvement in model fit when including an interaction term compared with the model without interaction term for all subdomains except for Body (see Table 5). The same result was demonstrated both for global self-esteem and physical self worth analyses. Hence, these analyses provided further support for the second hypothesis and the moderating effect of importance on the competence-global self-esteem and physical self worth relationships for all subdomains, except for Body.

The individual importance hypothesis and intra-individual analyses

Following the work of Hardy & Moriarty (2006) the third hypothesis was that domains that are intra-individually rated as more important will predict more global self-esteem variance compared with domains rated as less important. Results showed that the more importance participants attach to a domain, the stronger the correlation between the competence rating of that factor and global self-esteem (Table 6.). The most important domains for each individual accounted for substantially more global self-esteem variance (see Table 7.) compared with the least important domains when entered in the first step (model 1,2) but also when entered in the second step (model 2,1). The two most important domains, compared with the two least important domains, contributed substantially more to global self-esteem variance when entered first (model 1,2). When the two least important (model 2,1) domains were entered first, the two most important domains still explained almost the same amount of variance (13.3 vs. 14.0%) compared to the two least important domains. Overall, taking into account the general differences in explained variance across the two models, more important domains contributed substantially more to explained variance in global self-esteem than less important domains when adopting an idiographic analytical approach.

Discounting

We hypothesized (the fifth hypothesis) that the strongest tendency for discounting would appear for domains rated as least important and that these domains more specifically would be Sport and Strength. The strongest correlation between competence and importance ratings, and at the same time the lowest correlations with global self-esteem, was demonstrated for Sport and Strength indicating evidence of discounting (Table 8.). Conversely, the competence-importance correlation for the Body sub-domain was modest to weak and the correlation between Body and global self-esteem is, in general, moderate to high, showing no evidence of discounting. Hence, we found support for our fifth hypothesis.

Discussion

James' (1890) classical argument that peoples' evaluation of their competence will contribute to their overall self-worth primarily in domains for which they attach significant importance, has been viewed as theoretically appealing for scholars. However, the results of empirical studies on this issue have shown contradictory results, some providing support for James' tenets (e.g; Hardy & Moriarty, 2006; Harter, 1986; Fox, 1990; Pelham, 1995; Pelham & Swann, 1989), whereas others fail to do so (Marsh, 1986, 1993, 1994, 1995, 2008; Marsh & Sonstroem, 1995). Several reasons probably exist for why these studies have come to different conclusions, such as choice of analytical approach, small and homogenous samples and lack of reliable measures of importance.

In general, our results support different types of analyses for the basic mechanism whereby importance may influence self-esteem constructs. In the first set of analyses, using Marsh's original approach (Marsh (1986, 1993) where all subdomains are entered in the same model, we found weak support for the importance hypothesis as only the competence X importance crossproduct for the Sport subdomain contributed significantly to global self-esteem variance when all competence and importance ratings for all subdomains had been entered. Moreover, it should be noted that although the contribution of the four cross-products overall were significant in our study, they did not explain more than a total of 1.0% of the global self-esteem variance, which is in the same region as found in previous studies by Marsh (e.g., Marsh, 1986, 1993; 2008; Marsh & Sonstroem, 1995). However, as previously been noted by researchers (e.g., Hardy & Moriarty, 2006, Hardy & Leone, 2008; Pelham & Swann, 1989; Pelham, 1995), these analyses may be overly demanding due to ceiling effects and therefore the ability of this approach to detect support for James individual importance hypothesis may be questioned. In the second set of analyses using the Marsh and Sonstroem (1995) approach where one subdomain at each time is analyzed, the competence x

importance cross-terms of specific physical self-concepts uniquely explained higher order self-concept (global self-esteem and physical self worth) variance beyond competence and importance ratings in six out of eight analyses. Thus, the results provided weak to moderate support for our first hypothesis.

In Marsh and Sonstroem's (1995) study, no competence-importance cross-products added uniquely and significantly to the global self-esteem or physical self worth variance. As such, our results indicate stronger support for the James' individual importance hypothesis using the same analytical approach. Aside from using a more robust multi-item instrument of importance, we also based our results on a much larger and more heterogeneous sample (1831 male and female university and high school students and gym users from four different countries) compared with the Marsh and Sonstroem (1995) study (216 adult female aerobic dancers), which may have contributed to the differences in results. The pattern found in the simple slope analyses is in accordance with the theoretical assumptions of James (1890), Harter (1993) and Fox (1990, 1997); that is, as perceived importance for a specific domain increases, so do also the relationship between perceived competence in this specific domain and general self-worth. This indicates that people are most vulnerable to low general self-esteem when they fail to perceive competence in domains that they have staked their worth upon and thus deem important.

The need for stronger methodologies that manage to control for measurement error and using multiple indicators and latent factors when testing James individual importance hypothesis has been previously called for (e.g., Marsh, 2008). The SEM path analyses and the latent interaction analyses provided us with such methodologies. The results of both the SEM analyses and the latent interaction analyses supported the moderating effect of importance in all subdomains except for Body. The trend in our results, with competence ratings having positive relations and importance negative relations to global self-esteem and physical self

worth, may be related to the study of Scalas and Marsh (2008). Using a latent actual-ideal discrepancy methodology, they found that actual appearance contributed positively to physical self-concept and self-esteem whereas ideal appearance was negatively related to the higher order self-concept constructs. Hence, both these studies, using strong latent analytical approaches, found support for the notion that the combination of a high perceived importance/ideal self rating and a low perceived competence/actual self rating is related to lower levels of global self-esteem.

It is interesting to notice that the largest support for James individual importance hypothesis was found for the subdomains least related to global self-esteem and physical self worth; in this study Sport and Strength. Conversely, the more global self-esteem and physical self worth variance subdomains explained, the less support was provided for James individual importance hypothesis. For example, the Body subdomain demonstrated the strongest relation with both global self-esteem and physical self worth, supporting previous research (Fox, 1997, 1998; Harter, 1993). However, no evidence of the moderating effect of importance in the competence-global self-esteem relationship was found for Body. Hence, the Body subdomain seem to work differently compared with the other domains. For the majority of individuals body attractiveness is rather important and therefore hard to discount. Hardy & Moriarty (2006) reported that the Physical Appearance domain in their study was a quite strong predictor of global self-esteem, yet only ranked 10th out of 12th place in importance based on group norms. Similarly in our study the Body subdomain did not receive the highest importance ratings in three of the four subsamples, based on group means, although it demonstrated the strongest link to global-self-esteem (see Tables 1-3). Trying to explain their results, Hardy and Moriarty suggested that it may be harder to accurately report how important some domains are, for example body, due to strong influence of group norms and societal pressure and that participants therefore sometimes may suffer from denial when asked

how important their body is. Moreover, in studies of self-schemas for body-weight, (e.g., Markus, Hamill & Sentis, 1987) it has been suggested that body self-schemas are universal and that all individuals have some conception of their body image, As the body subdomain therefore may be quite relevant for everybody (although in different ways), a ceiling effect in terms of importance of the body subdomain seem highly possible.

. Moreover, the possibility of social desirability effects also seem more likely for Body than for other subdomains.

Although the results of all the different analytical approaches provide support for the theoretical assumptions of James (1890), the strongest and most unambiguous evidence in our study are drawn from the idiographic analyses. Given the robust pattern in these results, our analyses speak quite strongly for the notion that the importance people attach to different domains, in combination with the perceived competence in those domains, do contribute to their overall self-worth. A reason for why we found the strongest support for James model in these analyses may be linked to the problems associated with traditional nomothetic and inter-individual analyses based on perceived importance and comparison with group averages, raised by Pelham and Swann (1989), Pelham (1995), Hardy and Moriarty (2006) and Hardy and Leone (2008). Also, within the framework of self-discrepancy theory (Higgins, 1987), previous studies have generally shown that ideographic measures of self-discrepancies are better predictors of self-esteem (Moretti & Higgins, 1990), neuroticism (Watson & Watts, 2001), negative affect and body satisfaction (Halliwell & Dittmar, 2006) compared with nomothetic measures, although recent contradictory results have emerged (McDaniel & Grice, 2008). Although our analytical approach rather than our measure should be viewed as idiographic³, the findings of these previous studies on self-discrepancies seem to be in line with the results of our study. This speaks for the value of incorporating ideographically, as

well as traditional nomothetically, derived measures and analytical approaches when investigating competence and importance linked to global self-esteem in the future.

Our results indicate that the Strength and Sport subdomains show strongest evidence of discounting across the samples. In contrast, the Body subdomain did not show any sign of discounting. These results are in line with previous empirical findings (Fox, 1990; Hardy & Moriarty, 2006), suggesting that domains that are culturally less salient are more likely to be discounted. There is robust evidence of societal pressure to live up to the ideal of a fit and attractive body (Fredrickson & Roberts, 1997; Thompson et al., 1999) especially in younger adults. Body attractiveness and Condition should therefore be harder to discount. Sport and Strength, also received the lowest group importance mean ratings for all four samples in our study, further supporting this line of reasoning.

Robust support for the ideas of James has also been provided by Crocker and colleagues (Crocker, 2002; Crocker & Wolfe, 2001) using the framework of contingencies of self-worth. Despite the different approach taken by Crocker and colleagues to operationalise and measure the role of importance for general self-worth (framing items in their instrument directly at the perceived impact of success or failure in different domains for self-esteem (Crocker, Luhtanen, Cooper & Bouvrette, 2003) the results in the present study clearly support their conclusions and James hypotheses in relation to the importance of importance. When higher importance is placed on a domain, perceived competence in this domain will also be a stronger predictor of general self-esteem. In the parlance of the contingencies of self-worth framework, these results suggest that individuals who attach a high importance to a (physical) self domain but fail to perceive competence (success) in this area are more prone to report lower global self-esteem, state self-esteem, positive affect and greater negative affect (Crocker & Wolfe, 2001).

The most obvious limitation of our study is the cross-sectional nature of our data, hampering us from drawing conclusions in terms of cause and effect. Whats more, although

our sample included different nationalities and age groups, it still mostly comprised young, well-educated adolescents and young adults. For that reason we do not know how well these results would generalise to a sample of middleaged or older adults or non-student populations. Also, the use of only one self-concept domain, the physical self, limit the generalisation of our results. However, given the hierarchical mutlidimensional nature of the physical self-concept, the PSPP-R and the model behind it, we were able to test James individual importance hypothesis on a more specific level in the model, which provides important knowledege to the field and the ongoing debate. Our study also comprised a number of other important advantages compared with previous work. Aside from using a reliable multidimensional instrument of importance and competence of physical self-domains, our design provided larger samples and a greater variation in terms of participants' age, gender, cultural background. Also, instead of viewing our data from a single analytical approach or method, we choose to include several different ways of analysing the data that have recently appeared in the literature to achieve a more comprehensive triangulated picture. Perhaps most importantly, we used SEM-methodology and latent interaction analyses that appropriately control for measurement error; an analytical strategy that often has been recommended for fuuture work in previous studies but, as far as we know, no one prior to our study has used when testing James individual importance hypothesis.

Future studies should use different analytical strategies to investigate how importance and competence interrelate to form global self-evaluations. Also, future studies should adopt longitudinal designs with multiple measurement points across different cohorts that afford analyses of both interindividual and intraindividual trajectories of global self-esteem change linked to competence and importance ratings and their interaction. Moreover, we need to address moderating and mediating factors such as age, gender and contrasting cultural

background in the relationships among perceived importance, competence and global self-worth for the physical self-domain.

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Footnotes

¹ As the problem of multicollinearity in the multiple regression approach has been raised in previous studies (e.g., Hardy & Leone, 2008) we investigated the collinearity statistics (variance inflated factor; VIF and tolerance) for the entered variables in the regression models. When we used non-z-transformed variables, all VIF values were above 10 and tolerance was overall very low in particular for the interaction terms in the final step, indicating a serious problem. However, when we used the z-transformed variables, no variable had a higher VIF value in the final step than 4 and tolerance values were overall satisfactory (e.g., >.30). Therefore we were confident that no problem existed in terms of multicollinearity.

² We first conducted the analyses for each sample. However, the patterns of results were very similar across samples for all analyses. In the regression analyses competence X importance for the Sport and Strength subdomains added uniquely to global self-esteem variance in all four subsamples whereas the competence X importance interaction for Body did not add uniquely to global self-esteem variance in any subsample. In the latent interaction analyses, support was found for the effect of a competence-importance interaction on global self-esteem for the Sport subdomain in three of the four samples and for the Strength subdomain in all four subsamples whereas support was not found for the Body subdomain in any sample. Due to this, and to the fact that the purpose of the paper did not include testing cross-cultural differences, we decided to conduct and report the results based on the combined data.

³ The PSPP-R includes a typical fixed researcher-constructed list of items and not the participant-generated items that have been used in studies testing idiographic measurements of self-discrepancies (e.g., Halliwell & Dittmar, 2006; McDaniel & Grice, 2008).

Table 1

Mean (M), Standard Deviation (SD), and Cronbach Alpha (α) Scores for the Ten PSPP-R Variables and Global Self-Esteem in the Four Different Samples

Domain	Sweden (n=244)		Turkey (n=632)		Great Britain (n=495)		Portugal (n=460)	
	M (SD)	α	M (SD)	α	M (SD)	α	M (SD)	α
Sport	2.29 (.91)	.94	2.28 (.76)	.90	2.31 (.76)	.88	2.56 (.58)	.85
Sport Importance	2.02 (.80)	.92	2.38 (.79)	.89	2.09 (.77)	.89	2.72 (.52)	.75
Condition	2.61 (.86)	.91	2.51 (.69)	.86	2.44 (.77)	.89	2.73 (.56)	.84
Condition Importance	2.85 (.78)	.90	2.47 (.70)	.85	2.56 (.75)	.88	3.03 (.49)	.76
Body	2.26 (.79)	.91	2.42 (.71)	.86	2.22 (.77)	.90	2.52 (.60)	.85
Body Importance	2.46 (.74)	.92	2.56 (.80)	.88	2.54 (.74)	.87	2.78 (.59)	.83
Strength	2.15 (.79)	.92	2.13 (.75)	.91	2.15 (.78)	.91	2.39 (.61)	.87
Strength Importance	1.91 (.69)	.90	2.04 (.77)	.90	1.89 (.72)	.89	2.51 (.57)	.82
Physical Self-Worth	2.70 (.70)	.89	2.93 (.64)	.85	2.60 (.76)	.91	2.96 (.63)	.89
Physical Self-Worth Importance	2.75 (.66)	.88	2.96 (.71)	.87	2.77 (.72)	.88	3.20 (.51)	.82
Global Self-Esteem	3.15 (.57)	.87	3.09 (.61)	.80	3.05 (.67)	.90	3.17 (.55)	.86

Note: Scales range from 1-4.

Table 2

*The Prediction of Global Self-Esteem and Physical Self-Worth with the PSPP-R Domains
Analysed Together*

Domain	General self-esteem		Physical self- worth	
	Beta	R ² change	Beta	R ² change
Competence				
Sport	.078	.002**	.088	.003***
Cond	.173	.010***	.261	.023***
Body	.449	.132***	.531	.181***
Strength	-.073	.003*	.023	.000
Total R ²		.333***		.609***
Change				
Importance				
Sport	-.091	.007***	-.026	.001
Cond	.065	.001*	.043	.001
Body	-.094	.004**	-.111	.006***
Strength	-.138	.006***	-.086	.002**
Total R ²		.036***		.020***
Change				
Competence x Importance				
Sport	.090	.005***	.048	.002**
Cond	-.010	.000	-.031	.001
Body	.033	.001	.030	.001
Strength	-.006	.000	.003	.000
Total R ²	.010***		.	.003**
Change				

Note: *p<.05; **p<.01; ***p<.001

Table 3

*The Prediction of Global Self-Esteem and Physical Self-Worth) with the PSPP-R Domains
Analysed Separately*

Domain	Global self-esteem		Physical self-worth	
	Beta	R ² change	Beta	R ² change
Sport				
Competence	.419	.144**	.419	.310**
Importance	-.116	.009**	-.054	.000
Competence X Importance	.127	.018**	.139	.009**
Multiple R	.413**		.565**	
Adj.R ²	.121**		.318**	
Condition				
Competence	.497	.191**	.532	.409**
Importance	-.105	.008**	-.062	.006**
Competence X Importance	.062	.005**	.054	.002**
Multiple R	.452**		.646**	
Adj.R ²	.203**		.417**	
Body				
Competence	.589	.300**	.767	.524**
Importance	-.136	.018**	-.118	.013**
Competence X Importance	.026	.001	.023	.001
Multiple R	.565**		.733**	
Adj.R ²	.318**		.536**	
Strength				
Competence	.367	.080**	.535	.230**
Importance	-.173	.016**	-.120	.007**
Competence X Importance	.091	.010**	.083	.008**
Multiple R	.325**		.495**	
Adj.R ²	.104**		.243**	

Note: *p<.05; **p<.01; ***p<.001

Table 4

Direct, indirect and total effects of Competence X Importance latent factors on global self-esteem and physical self worth for each subdomain in SEM analyses.

<i>Factors</i>	Global self-esteem			Physical Self Worth		
	Parameter estimate ^a	Std error	Critical ratio ^b	Parameter estimate ^a	Std error	Critical ratio ^b
<u>Sport</u>						
Comp X Imp direct effects	0.071	0.020	3.448*	0.125	0.025	4.952*
Comp X Imp indirect effects	0.117	0.023	4.975*			
Comp X Imp total effects	0.187	0.028	6.783*			
<u>Condition</u>						
Comp X Imp direct effects	0.063	0.022	2.853*	0.071	0.025	2.801*
Comp X Imp indirect effects	0.074	0.026	2.823*			
Comp X Imp total effects	0.137	0.030	4.529*			
<u>Body</u>						
Comp X Imp direct effects	0.015	0.024	0.643	0.033	0.023	1.403
Comp X Imp indirect effects	0.035	0.025	1.413			
Comp X Imp total effects	0.050	0.030	1.680			
<u>Strength</u>						
Comp X Imp direct effects	0.031	0.021	1.459	0.116	0.028	4.174*
Comp X Imp indirect effects	0.110	0.026	4.201*			
Comp X Imp total effects	0.141	0.031	4.529*			

^a Standardized parameter

^b Critical ratio (the ratio of the standardized parameter to its standard error)

* p<.01;

Table 5

Latent Moderated Structural Equations Analyses of the PSPP-R Domains and their Respective Importance Ratings on Global Self-Esteem and Physical Self-Worth

Domain	Global Self-Esteem	Physical Self Worth
	-2LL difference ^a	-2LL difference
Sport	12.14***	6.76**
Condition	11.34***	23.52***
Body	1.26	0.52
Strength	11.38***	6.72**

Note: * $p < .10$; ** $p < .05$; *** $p < .01$; ^a all 2LL differences are compared for 1 df

Table 6

Mean (M), Standard Deviations (SD) of Competence Ratings of Domains Based on their Perceived Importance for each Individual (Intraindividual analyses) and Correlations with Global Self-Esteem)

Domains	Intraindividual analyses	
	M (SD)	Correlation with global self-esteem
Most important	2.61 (.74)	.498***
Second most important	2.48 (.71)	.424***
Third most important	2.26 (.70)	.366***
Least important	2.10 (.70)	.297***

Table 7

Prediction of Global Self-Esteem Variance by Competence Ratings of Domains Based on their Perceived Importance for each Individual (Intraindividual analyses)

Domains	Intraindividual analyses	
	R ² Change Model 1,2	R ² Change Model 2,1
1. Two most important	.268***	.133***
2. Two least important	.005**	.140***
1. The most important	.254***	.167***
2. The least important	.001	.087***

*p<.05; **p<.01;***p<.001

Table 8

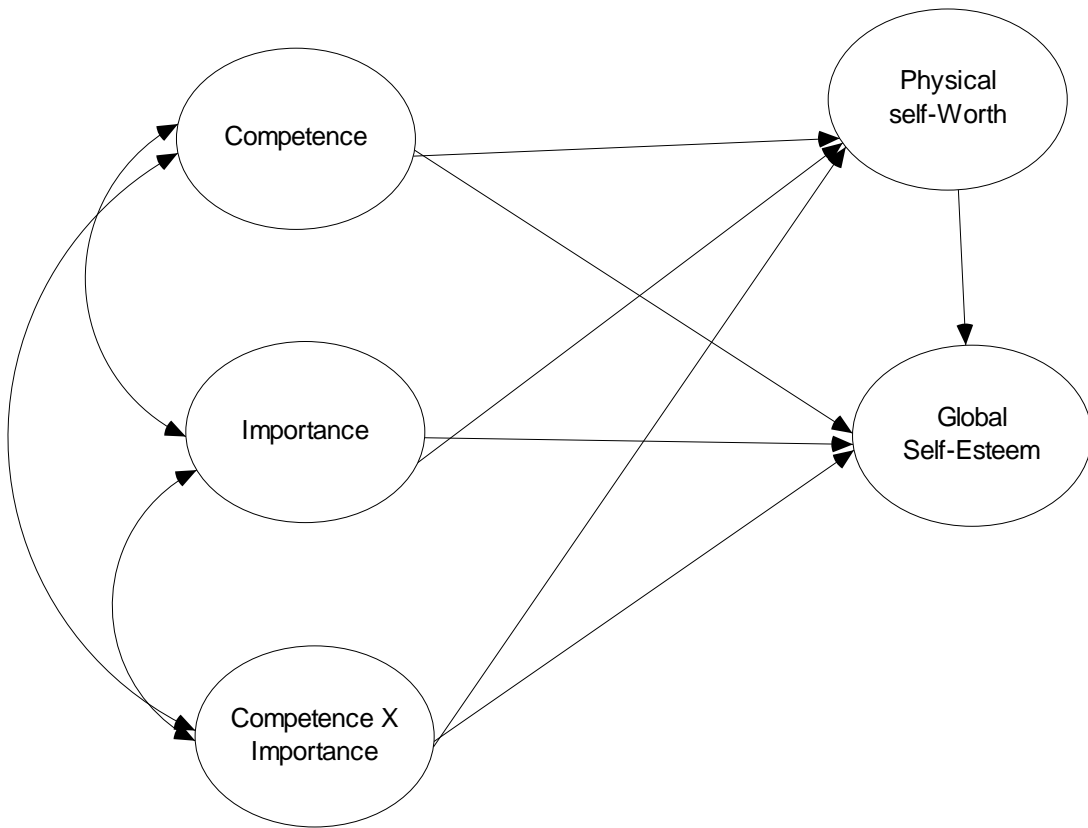
Correlations Between Competence Ratings, Importance Ratings, Physical Self Worth and Global Self-Esteem

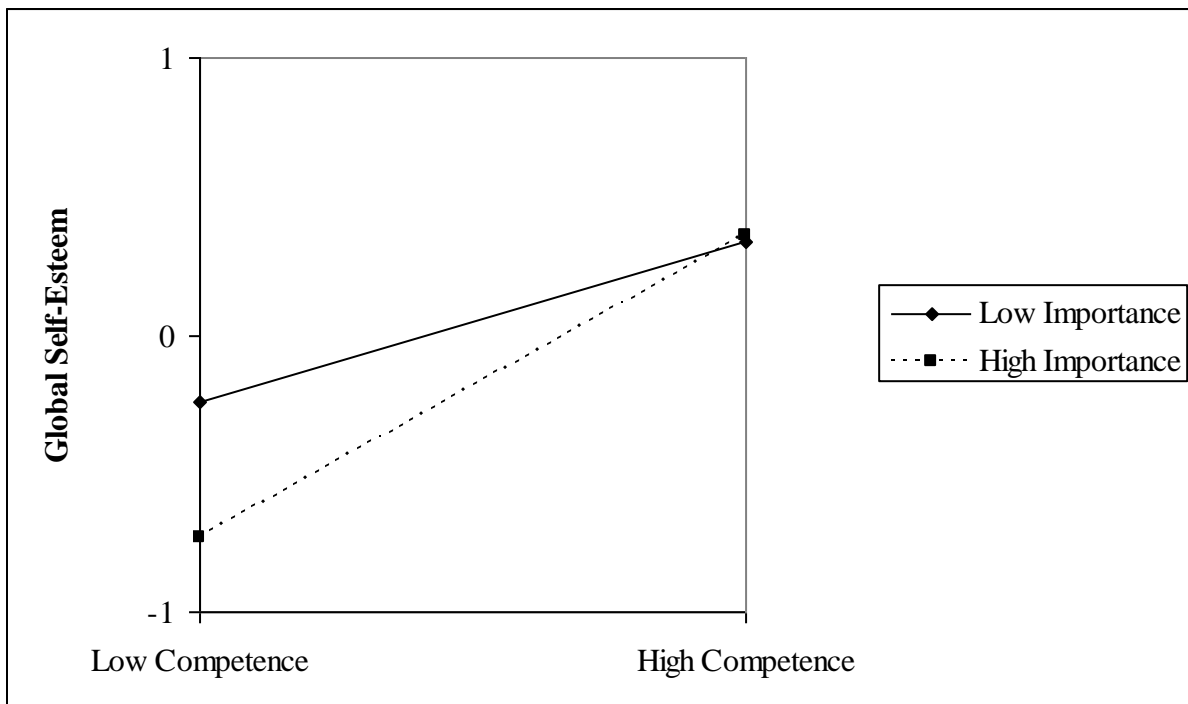
Domain	Correlation with importance	Correlation with Physical self worth	Correlation with Global Self-Esteem
Sport	.669**	.540**	.369**
Condition	.632**	.633**	.434**
Body	.342**	.733**	.542**
Strength	.637**	.272	.101**
Physical self worth	.444**		.733**

Figure Caption

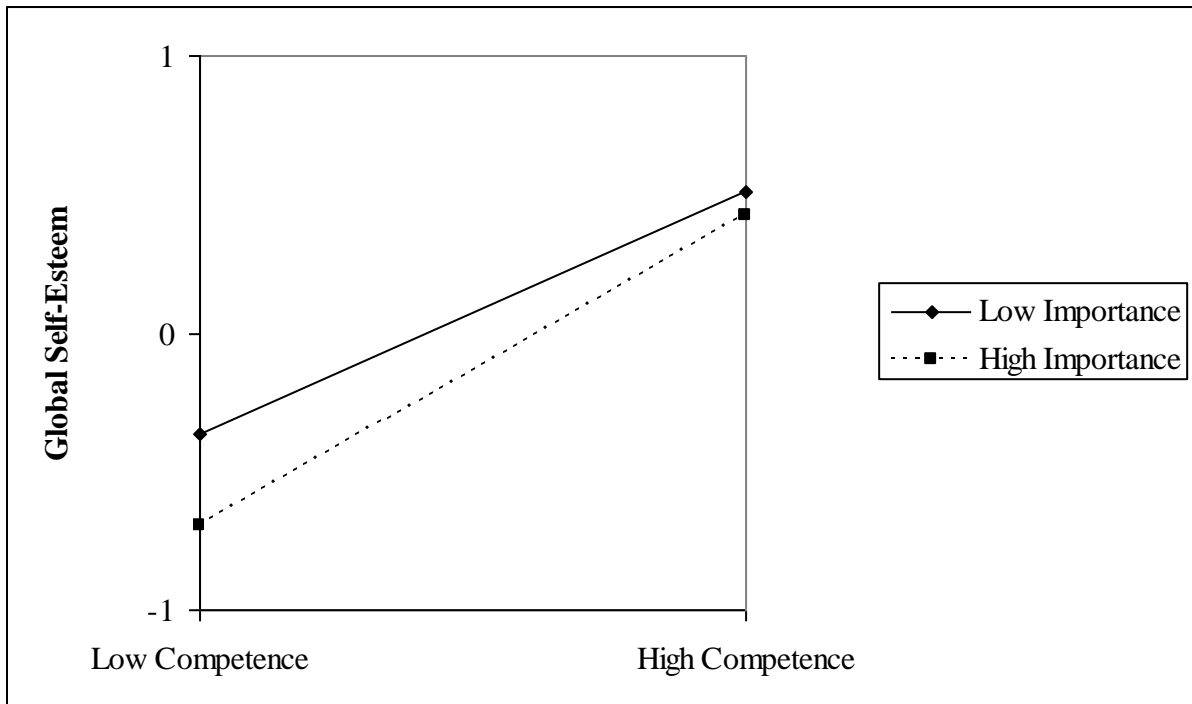
Figure 1 Path diagram of the SEM path analyses. The measurement models are not shown.

Figure 2. Simple slope analyses of competence-importance interactions on Global Self-Esteem for different PSPP-R subdomains, demonstrated for: (a) Sport Competence, (b) Physical Conditioning (c) Physical Strength

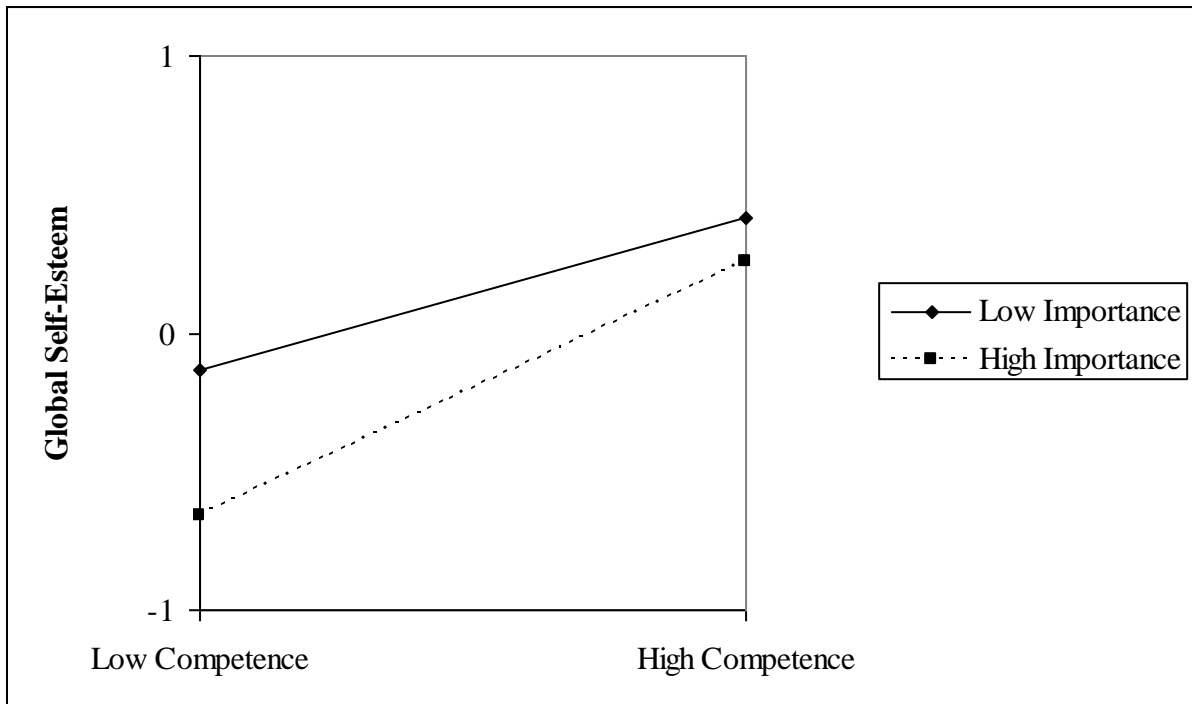




(a)



(b)



(c)