Beyond Czech and Slovak differences in Hofstede’s Masculinity index: An investigation of cross-cultural differences using Hofstede’s and Schwartz’s framework

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Abstract:
A number of studies adopting either Hofstede’s Cultural Values Survey approach or Schwartz’s concept of Value Types have documented major distinctions in value preferences between Czechs and Slovaks. The most prominent one has been represented either by the dimension of Masculinity (as constructed by Hofstede) or value type of Achievement (a concept of Schwartz); both defined by similar content, stressing the importance of success, achievement and competence. In all the five published comparisons so far – two based on Cultural Values Survey by Geert Hofstede (Kolman, Norderhaven, Hofstede, & Dienes, 2003, Bašnáková, Brezina and Masaryk, 2016) and three on value types by Shalom Schwartz (Schwartz & Bardi, 1997, Schwartz, Bardi & Bianchi, 2000 and Ilgová & Ritomský, 2009), -- Slovak participants scored higher in both Masculinity (MAS) and Achievement. Interestingly, Slovakia’s MAS score reported by Kolman et al. (2003) reached one of the highest values of all the surveyed countries with the VSM instrument, thus becoming an international outlier. As we concluded in our previous report of cross-cultural differences in Bašnáková et al. (2016), it remains puzzling why two nations that share a similar geographical and historical context would differ on the Masculinity dimension by such a large margin. In this study, we therefore aim to explore this difference in more detail. For that purpose, we contrasted two matched samples of Czech (N=200) and Slovak (N=200) participants representative of the two populations. In essence, we believe that there are two possibilities behind the difference in Masculinity. Firstly, the reported difference between Czechs and Slovaks is psychologically valid and therefore can be explained in terms of another number of cultural dimensions, such as the value system by Schwartz, and/or by underlying demographic factors. However, we cannot a-priori exclude a more mundane reason for the difference. Secondly, that it is simply an artefact of the questionnaire brought about by a small number of outlying items; for example because there are systematic differences in how participants in the two countries interpret a particular item. In order to differentiate between these two positions, and create a more grounded reference, we focused our analysis on three issues: (1) Identification of demographic factors that relate to Masculinity in both samples, (2) Comparison of Masculinity with Schwartz’s individual value types, (3) Analysis of the items constituting the Masculinity index. As for demographic factors, there is a possibility that the difference between Czechs and Slovaks on Masculinity is caused by some underlying factor(s), which in itself is not a cultural-psychological dimension of value differences but can explain the level of a studied value. The most likely candidate would be religious affiliation, as traditionally Slovaks are mostly Catholics – 62% in the 2011 Census (Slovak Statistical Office, 2011), while Czechs are non-confessionals (two major Churches – Roman Catholics and Protestants together claim less than 20% believers.
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according to the 2011 Census (Czech Statistical Office, 2013)). Regarding the second issue, we believe that the Czech and Slovak Masculinity difference can be explained in terms of differences in individual value types. There are several value types which we expect to correlate with the Masculinity index; above all, based on their theoretical formalization, are the cases of Achievement and Power (or Universalism and Benevolence, in negative correlation). Lastly, concerning the item analysis (3rd issue) we refer to Ripková and Masaryk (2015), who asked Czech and Slovak students to discuss items from the VSM08 questionnaire. One of the main findings of the study was that several items were interpreted quite differently both within and across the countries. This prompted us to look in more detail at the four items that make up the MAS index. Of the four, three items reached equal average scores in both Czech and Slovak participants. However, item number 8 (whether when choosing his/her ideal job, a participant would consider as important to „live in a desirable area”) differed considerably. Interestingly, this was precisely one of the items which the Czech and Slovak participants of the Ripková and Masaryk study tended to interpret in different ways. In both Czech and Slovak student focus groups, the interpretation was ambiguous as to whether “attractive” means “subjectively attractive” (I like the place and feel good living in it), which is more in line with Hofstede’s feminine values, or “objectively attractive” (it is in a prime locations, on a good address), which is more in line with masculine values. We therefore conducted an analysis where the influence of this item on the resulting Masculinity index was minimized, and explored its impact on the overall score. Our results, based on participants’ responses to VSM2013 and PVQ21 and their demographic information, suggest that factors such as religious affiliation, age, gender and residence size were not major predictors of cross-cultural differences in Masculinity, but rather this single item on Hofstede’s VSM 2013 questionnaire. After minimizing the influence of item number 8 on the MAS score, we found that not only did the large difference between Masculinity in Czechs and Slovaks disappear, but also that Masculinity was now better accounted for by the two Schwartz’s values that we have predicted based on theoretical grounds: Achievement and Power. What remains to be discussed is whether the differences in item 8 are merely an artefact of the instrument (e.g. Czech and Slovak participants understood the item in systematically different ways) or whether this item taps into real and profound differences in Czech and Slovak cultures. This particular finding offers support to the assumption that the validity of differences in Masculinity between Czechs and Slovaks as measured by Kolman et al. (2003) and Bašnáková et al. (2016) is, at least in part, influenced by either a) methodological artefacts (instrumental validity) or b) construct bias. One theoretical possibility brought about by our findings is that while the dimension of Masculinity might be culturally universal, the items devised to measure it could have culture-specific content.

Keywords:
Dimensions of National Culture. Masculinity. Individual Value Types. VSM 2013. PVQ21.

Introduction

Cultural comparisons of values represent an important milestone in the development of cross-cultural psychology. For decades, the topic has formed the core of international research interest in psychology. There has been only very limited use of samples from Czechoslovakia in the first waves of comparative studies on values. Information about Czech and Slovak cultures started to enter world-wide value databases with real data instead of estimates only after the separation of Slovaks and Czechs and the creation of two independent states in 1993. There are five published comparisons so far - two based on Cultural Values Survey by Geert Hofstede (Kolman, Norderhaven, Hofstede, & Dienes, 2003, Bašnáková, Brezina & Masaryk, 2016) and three on value types by Shalom Schwartz (Schwartz & Bardi, 1997, Schwartz, Bardi & Bianchi, 2000 and Ilgová & Ritomský, 2009). The major distinction in value preferences between Czechs and Slovaks has been often represented either by the dimension of Masculinity (as constructed by Hofstede) or value type of Achievement (a concept of Schwartz), both defined by similar content, stressing the importance of success, achievement and competence. Slovak samples have been found to score higher in both Masculinity (MAS) and Achievement in all of
Previous findings on cross-cultural differences in values between Czechs and Slovaks

The first data collection on the Czech and Slovak populations using the Values Survey Module (VSM), version 98, was carried out by Kolman et al. (1999, 2003). As it was designed to capture differences on Hofstede’s dimensions of national culture among central European countries, the report also included Poland and Hungary; with the Netherlands as an anchor country. As already mentioned, the results placed Slovak Masculinity scores at the very top of an international database comprising dozens of national cultures. Slovaks were also characterized by a high level of Power distance (PDI) and, in relative terms, by average values on another two dimensions (Individualism, Long-term Orientation). As for the Czech data, it was far less extreme; with a Masculinity score of 77 in contrast to the Slovak score of 127. Czech and Slovak data was collected from university students, i.e. mostly participants in their twenties, and the sample was unbalanced with regard to gender (for a more detailed critique of the sample, see Bašnáková et al., 2016).

Over a decade later, Bašnáková, Brezina and Masaryk (2016) collected another set of data using a newer version of the Values Survey Module (VSM 13) on a representative sample of 200 participants in each country that were carefully matched regarding gender and age (mean age for Czechs and Slovaks 42.2, SD 14.7). Comparing Slovaks with Czechs on calibrated data via a matched Dutch sample, the authors presented results that reached considerably less extreme values than Kolman et al. While differences between Czechs and Slovaks in most dimensions were only small, it was again Masculinity that presented an exception. It did reach lower absolute values than in Kolman’s study (calibrated scores were 83 for Slovakia and 62 for the Czech Republic, raw scores 34.5 and 14, respectively), but the difference of about 20 points was still highly significant in the same direction.

The high Masculinity scores in the Slovak sample, and the fact that the highest relative difference to the Czech results was on this dimension, were referenced to another comparative value study carried out by Ilgová and Ritomský (2009). They compared Schwartz’ individual value types in Czech and Slovak young people, and found major differences in the values of Tradition, Achievement (both higher in Slovak population), Hedonism and Power (higher in Czechs). Even though this sample was different than the more representative sample used in our study (Bašnáková et al., 2016), these results represent a valid reference regarding the cross-

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1A notable exception are Schwartz & Bardi (1997) and Schwartz, Bardi, & Bianchi (2000) who used different methodology, not compatible with the PVQ framework.
cultural differences in Masculinity. The authors reached the conclusion that for the majority of Slovak youth, acceptance of the way of thinking and habits of their traditional culture, as well as a reliance on faith and philosophy, are very important. On the other hand, sensual satisfaction, enjoyment of life and hedonism gain more weight in the Czech population of the same age (15 to 34 years).

Both Schwartz value types and Hofstede’s dimensions of national culture present probably the most frequently used measures for comparing human values at the cultural level. Although both theoretical frameworks as well as methodology in Schwartz and Hofstede’s legacies are very distinct (see Section 1.3), results of the three relevant studies applying the two approaches within the context of Czech and Slovak samples seem to bring relatively consistent findings throughout the last decades. However, the two frameworks have never been contrasted in the same sample of population within these two cultures. Such a comparison can help us understand the content of the Masculinity index and the studied cultural differences.

**Brief description of the two cultural value models**

While Hofstede derived his framework empirically, Schwartz developed his framework theoretically. Both scholars have empirically examined their frameworks using large-scale multi-country samples and found greater cultural differences between countries than within countries, suggesting the frameworks could be used to compare countries/cultures. The fact that Hofstede’s dimensions are applicable exclusively at the cultural level, in contrast to Schwartz value types designed to be employed in both cultural and inter-individual comparisons, can be considered as the most significant difference between the two approaches.

**Research problem**

As we concluded in our previous report of cross-cultural differences in Bašnáková et al. (2016), it remains puzzling why two nations that share a similar geographical and historical context, would differ on the Masculinity dimension by such a large margin. In this study, we therefore aim to explore this difference in more detail. In essence, there are two possibilities behind the difference. Firstly, the reported difference in Masculinity between Czechs and Slovaks is valid and therefore can be explained in terms of another array of cultural dimensions, such as the value system by Schwartz, and/or by underlying demographic factors. However, we cannot a-priori exclude a more mundane reason for the difference. Secondly, that it is simply an artefact of the questionnaire brought about by a small number of outlying items (e.g. that there are systematic differences in how participants in the two countries interpret a particular item). In order to differentiate between these two positions, and create a more grounded reference, we focused our analysis on three issues:

1.) Can we explain differences in Masculinity solely with reference to demographic factors?

One possibility is that the difference between Czechs and Slovaks on Masculinity is caused by some underlying factor(s), which in itself is not a cultural-psychological dimension of value differences but can explain the level of a studied value. The most likely candidate would be religious affiliation, as traditionally Slovaks are mostly Catholics – 62% in the 2011 Census (Slovak Statistical Office, 2011), while Czechs are non-confessionals (two major Churches –
Roman Catholics and Protestants together claim less than 20% believers according to the 2011 Census (Czech Statistical Office, 2013). Based on Hofstede’s findings (2001), we expect MAS index to correlate positively with (the existence of) religious belief. Within the context of religious affiliation, Hofstede claims that “on average, countries with Catholic tradition tend to maintain more masculine and those with Protestant tradition more feminine values” (2001, p. 327). Although direct comparison of MAS in people with and without religious affiliation is not found in the literature, Hofstede points to secularization, or to a belief that “religion is not important in life” as examples representing low masculinity. The importance attributed to religion (as compared to other values in EVS study) was highly correlated with MAS (Hofstede, 2001, p. 327).

2.) Can we explain differences in Masculinity by underlying differences in Schwartz’s value types?

Since both questionnaires were filled in by the same participants, we can cross-reference the data. In theory, the Czech and Slovak Masculinity difference can be explained in terms of differences in individual value types. There are several value types which we expect to correlate with the Masculinity index; above all, based on their theoretical formalization, are potentially positively correlated Achievement and Power, or, negatively correlated Benevolence and Universalism. On the second level of Schwartz theory, we focus on relation of MAS and Self-Enhancement (positive) and Self-Transcendence (negative).

3.) Can we explain underlying Masculinity differences through item analysis?

In a qualitative study by Ripková and Masaryk (2015), Czech and Slovak students were asked to discuss items from the VSM08 questionnaire, and one of the main findings was that several items were interpreted quite differently both within and across countries. This prompted us to look in more detail at the four items that make up the MAS index. Of the four, three items reached equal average scores in both Czech and Slovak participants. However, item number 8 (whether when choosing his/her ideal job, the participant would consider „living in a desirable area“ to be of importance) differed considerably. Interestingly, this was precisely one of the items which the Czech and Slovak participants of Ripková and Masaryk study tended to interpret in different ways.

In both Czech and Slovak student focus groups, there was a general disagreement on whether “location“ pertains to the location of the workplace or of place of residence. More importantly, the interpretation was ambiguous as to whether “attractive“ means “subjectively attractive“ (I like the place and feel good living in it), more in line with Hofstede’s feminine values, or “objectively attractive“ (it is in a prime locations, a good address), more in line with masculine values. In the small student sample, there was a consistent split between these two interpretations among Czech (8/11) and Slovak (6/11) participants; unfortunately, both samples were mostly females and thus we cannot make any generalizations as to whether there was a gender bias in interpreting the question. Even though we cannot be sure whether our participants experienced the same confusion, this is a potential cause for concern. We therefore conducted an analysis where the influence of this item on the resulting Masculinity index was minimized, and explored its impact on the overall score.
Methods

Participants
Our sample consisted of 200 Czech and 200 Slovak participants identical with the sample recruited for Bašnáková’s research (2016, et al.) by Taylor, Nelson, Sofres (TNS), a leading market research group. The mean age of the Slovak sample reached 41.4 (SD=14.9), compared to 43.0 (SD=14.4) in the Czech sample. Both genders were equally represented in the Czech (100M/100F) and Slovak samples (99M/101F). We used the Quota Sampling procedure to select the participants according to age, gender, region, and size of their place of residence, matching the distribution of these variables in the respective populations. Participants were selected from an online panel of participants maintained by TNS. All the respondents were paid by the agency for their participation.

Instruments
We used the VSM 2013 and PVQ21 together with 8 additional questions designed to capture demographic information (see Procedure). Here, we describe the two value questionnaires in more detail.

The evolution of VSM dates back to 1967 when G. Hofstede started to collect responses to value statements from more than 117,000 IBM employees in 40 nations in search of cultural solutions to organizational problems. The following four cultural dimensions were derived from this data (Hofstede, 1983) and remain at the heart of much cultural research:

(1) Power distance (PDI). The extent to which people accept that power in institutions and organizations is distributed unequally;
(2) Uncertainty avoidance (UAI). The extent to which people feel uncomfortable with uncertainty and ambiguity;
(3) Individualism (IDV). A preference for a loosely knit social framework in which individuals take care of themselves and their immediate families. Collectivism is the alternative and it is a preference for a tightly knit, social framework in which individuals expect relatives, clan, or another in-group to look after them in exchange for loyalty;
(4) Masculinity (MAS). A preference for achievement, heroism, assertiveness, and material success rather than Femininity, which is a preference for relationships, modesty, caring for the weak, and quality of life (Hofstede, 2001).

For comparison, S. Schwartz (1992) administered a list of 56 (later 57) value items to student, teacher, adult, and adolescent samples in over 70 countries. He tested the hypothesized typology and structural relations in each sample using smallest space analysis and a configurational verification approach (a type of multidimensional scaling intended for hypothesis testing; Borg & Groenen, 2005). For this purpose, he partitioned the value space into conceptually coherent regions of value items. The analyses demonstrated that the two-dimensional array of value items can be: (a) partitioned into regions that represent ten motivationally distinct types of values, (b), that the regions of the values are ordered around a circle in a manner that reflects their mutual compatibilities and conflicts, and that (c) 45 (later 46) of the value items emerge in the spatial region of their predicted motivational type of value in at least 75% of more than 200 samples (Schwartz, 2006). Two dimensions, labelled “Openness to change versus conservation” and “Self-enhancement versus Self-transcendence,” summarize the relations between the values in the space.
Within these two dimensions, ten individual value dimensions were identified that represented likely conflicts and compatibility between values. These individual (or first-order) level value types are described below (Schwartz and Bardi, 2001, p. 270):

(1) **Power.** Social status and prestige, control or dominance over people and resources.
(2) **Achievement.** Personal success through demonstrating competence according to social standards.
(3) **Hedonism.** Pleasure and sensuous gratification for oneself.
(4) **Stimulation.** Excitement, novelty, and challenge in life.
(5) **Self-direction.** Independent thought and action – choosing, creating, exploring.
(6) **Universalism.** Understanding, appreciation, tolerance, and protection for the welfare of all people and for nature.
(7) **Benevolence.** Preservation and enhancement of the welfare of people with whom one is in frequent personal contact.
(8) **Tradition.** Respect for, commitment to, and acceptance of the customs and ideas that traditional culture or religion impose on the self.
(9) **Conformity.** Restraint of actions, inclinations, impulses likely to upset or harm others and to violate social expectations or norms.
(10) **Security.** Safety, harmony, and stability of society, of relationships, and of self.

As Schwartz’s value types were derived from a set of items “developed to measure the content of individual values recognized across cultures” (Schwartz, 1994, p. 88), the author claims that the items are close to an exhaustive set of etic cultural dimensions, and that Hofstede’s four dimensions are included within these dimensions (Schwartz, 1994).

Schwartz’s cultural model has been validated in relation to the dimensions of Hofstede’s model. An Individualism Index was positively correlated with Affective and Intellectual Autonomy and with Egalitarian Compromise (Schwartz, 1994), and negatively correlated with Conservation and with Hierarchy (Gouveia and Ross, 2000). As for Masculinity, MAS index correlates positively with Schwartz’s value dimension of Mastery (ambitious, capable, choosing own goals, daring, independent, successful) across 23 overlapping countries of Hofstede IBM research (Hofstede, 2001). Conceptualization of Mastery, as cultural emphasis on getting ahead through active self-assertion (ambition, success, daring, competence) is in line with value type of Achievement defined at the individual level by personal success through demonstrating competence according to social standards (ambitious, successful, capable, influential).

According to Hofstede (2001) in the Gordon Survey of Interpersonal Values, MAS was negatively related to benevolence in male students, defined almost identically as Schwartz’s benevolence (sharing with others, helping the unfortunate, being generous) which occupies a conflicting position to Achievement. Interestingly, MAS is the only one of four dimensions of national culture that proves no relation to a country’s wealth (Hofstede, 2001). As to the statistical comparisons of Masculinity per se with Schwartz’s Value types, we have not found any relevant evidence in the literature. Based on the above theoretical assumptions, the dimension is expected to correlate positively with Self-enhancement values represented by Achievement, Power or/and Hedonism and negatively with values of Self-transcendence (Benevolence, Universalism, Conformity).
Values Survey Module 2013, used in this study, is a questionnaire developed by G. Hofstede and designed for comparing culturally influenced values and sentiments of similar respondents from two or more countries. It allows scores to be computed on six dimensions of national culture, on the basis of four questions per dimension. Participants indicate their level of identification with each statement on a 5-point Likert-type scale.

Most of the items in VSM 2013 are new or have been changed to the extent that they can no longer be equated to a single VSM94 item (which to a large extent applies to VSM 08 as well), while a portion of the original questions remain identical in content and only the wording was adjusted; including the reversion of answers (Bašnáková et al., 2016). The authors of the manual for VSM 08 state that “the new items in the new version were chosen because of their similarity to items in other reliable studies, but the reliability of the new version cannot be proven a priori” (Hofstede et al., 2008, p. 11).

In translating the VSM13 questionnaire into Slovak and Czech, we proceeded as follows. First, native speakers of each of the languages (Czech and Slovak) with full professional proficiency in English translated the VSM 2013 from English. Then, these translations were back-translated into English and any inconsistencies were discussed. Lastly, the final translations were checked by Czech and Slovak native speakers who had not seen the original translations. Even with such a careful translation procedure, however, items in an intercultural survey may not be universally equivalent. Certain concepts may have ambiguous meaning as well as certain questions may have different connotations in different cultures. We return to this issue in the Discussion.

Portrait Values Questionnaire is a values scale adopted from S. Schwartz’s work on basic human values. Although the findings generated from the PVQ do demonstrate individual level values, PVQ has been used in over 70 countries so far, and provides evidence of consistency. In studies across the world, Schwartz and Bardi (2001) identified a high level of pan-cultural agreement regarding the hierarchy of importance of the ten values. PVQ has been adopted to form part of the European Values Survey project.

PVQ consists of 21 questions that form 10 motivationally distinct values types. Given that nine values are measured by only two items and the tenth by three, two studies of student samples have assessed the test-re-test reliability of the ten values, as measured by the PVQ. Respondents completed the PVQ twice, separated by an interval of two weeks in Israel and six weeks in Germany. The test-re-test reliabilities (Israel & Germany) were moderate to high: Power .84 & .77, Security .88 & .70, Conformity .86 & .72, Tradition .81 & .80, Benevolence .82 & .62, Universalism .83 & .75, Self-direction .66 & .70, Stimulation .74 & .76, Hedonism .84 & .65, and Achievement .83 & .82. The Czech and Slovak versions of the PVQ scale were downloaded from the EVS website in November 2013. The questionnaires were administered online through the TNS agency in December 2013.

Procedure

For each participant, we computed Hofstede’s uncalibrated Masculinity score according to the manual (Hofstede and Minkov, 2013) (MAS = 35*(item5-item3) + 35*(item8-item10), see Table 1.).

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2 Individualism, Power Distance, Masculinity, Uncertainty Avoidance, Long-term Orientation, Indulgence vs. Restraint.
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**Table 1**: MAS index: In VSM13, the Masculinity index, according to Hofstede & Minkov (2013), is calculated as follows: \( \text{MAS} = 35 \times (\text{item5} - \text{item3}) + 35 \times (\text{item8} - \text{item10}) \). The equation refers to the four items listed in this table.

| In choosing an ideal job, how important would it be to you to… | 3. Get recognition for good performance | 5. Have pleasant people to work with | 8. Live in a desirable area | 10. Have chances for promotion. |

The difference in Masculinity scores between Czech and Slovak participants was significant, with Slovaks scoring higher than Czechs (Mann–Whitney non-parametric U-test: \( U=1.578, p<.001 \)). We also computed 10 first- and 4 second-level value indices of Schwartz (see Table 2). We used raw scores for all analyses and did not adjust for differences in scale use (“centering”), but we made sure that there were no significant differences between Czech and Slovak item means (“MRAT”, i.e. individual mean scores across all items). The scores were reversed from their original direction, because in Schwartz’s questionnaire, “1” signifies a higher loading on a particular value and “6” signifies a lower loading. The purpose of the score-reversion was to make the direction of scores more intuitive (higher loading = higher score) and it did not influence the interpretation of results. As for demographic variables, we collected information about gender, age, residence size, education and religiosity.

**Table 2**: Hofstede’s Masculinity index and Schwartz’s value types by country (S1 denotes first-order values, S2 denotes second-order values). Standard deviations are in parentheses. Masculinity indices are uncalibrated (raw scores). For value types, “1” indicated low loading, “6” indicated high loading on a given value. Non-parametric Mann-Whitney U-test for comparing two independent samples was used. Significant differences between countries are in bold. Last column indicates effect sizes (\( r_m \)).

|                        | Slovak participants | Czech participants | z-statistics | p      | Effect size (rm) |
|------------------------|---------------------|--------------------|--------------|--------|------------------|
| **Masculinity (H)**    | 34.48 (49.56)       | 14.00 (54.92)      | -3.76        | < .001 | 0.188            |
| Conformity (S1)        | 2.92 (1.00)         | 3.05 (1.12)        | -1.48        | .14    | 0.074            |
| Tradition (S1)         | 3.17 (0.97)         | 3.18 (1.02)        | -1.42        | .89    | 0.071            |
| **Benevolence (S1)**   | 3.44 (0.89)         | 3.68 (0.77)        | -2.71        | .01    | 0.136            |
| Universalism (S1)      | 3.48 (0.77)         | 3.54 (0.78)        | -0.82        | .42    | 0.041            |
| Selfdirection (S1)     | 3.58 (0.86)         | 3.69 (0.90)        | -1.91        | .06    | 0.096            |
| Stimulation (S1)       | 2.63 (1.12)         | 2.57 (1.14)        | -.50         | .62    | 0.025            |
| **Hedonism (S1)**      | 2.62 (1.17)         | 2.91 (1.08)        | -2.43        | .02    | 0.122            |
| Achievement (S1)       | 2.95 (1.08)         | 2.73 (1.09)        | -1.94        | .05    | 0.097            |
| Power (S1)             | 2.40 (1.07)         | 2.49 (1.07)        | -.71         | .48    | 0.036            |
| Security (S1)          | 3.31 (1.03)         | 3.48 (0.98)        | -.62         | .10    | 0.081            |
| **Self-transcendence (S2)** | 3.46 (0.73) | 3.61 (0.69)        | -2.02        | .04    | 0.101            |
| Self-enhancement (S2)  | 2.67 (0.97)         | 2.61 (1.00)        | -.55         | .58    | 0.028            |
| Conservation (S2)      | 3.13 (0.78)         | 3.24 (0.79)        | -1.27        | .20    | 0.064            |
| Openness To Change (S2)| 2.94 (0.86)         | 3.06 (0.82)        | -1.40        | .16    | 0.070            |
Statistical software IBM SPSS 22.0 was used for data analysis. A multiple linear regression analysis, The Enter method, was used for studying the relationship between Masculinity and demographic variables. The Enter method was used to ensure that no demographic variable was excluded from the model because the aim of the analysis was to have models with all variables in the two subgroups. Sample sizes (N=200 in both groups) meet the requirements for regression analyses (Tabachnick, Fidell, 2007). Our analytic strategy combined confirmatory and exploratory approaches. The Spearman rank correlation was used for assessing the relationship between Masculinity and other studied cultural values. The Stepwise multiple regression analysis was used to study the relationship between Masculinity and other cultural values together with demographic variables. The Stepwise method was used to statistically simplify the model to only statistically significant variables. The above mentioned analyses together with Mann-Whitney U test were used with the new score of Masculinity where we controlled for the influence of item 8.

**Results**

We report our results according to the three theoretical issues stated in the Introduction.

1.) Can we explain differences in Masculinity with reference to demographic factors?

In order to test whether there is a relationship between a country’s Masculinity score and its demographics, we used two separate multiple regression analyses (the Enter method), one for each country. We decided to include gender (men, women), age, education, religious affiliation (believers, non-believers), and residence-size (up to 5,000 inhabitants, between 5,000 and 100,000, and more than 100,000) as candidate demographic predictors in the model. The Czech model was not statistically significant \(F(5,194) = 2.03, p = .076\). In contrast, the Slovak model was statistically significant \(F(5,194) = 3.035, p = .012, R^2 = .073\). In the Slovak sample, both religion (β=-.189, p=.008) and residence-size (β=.165, p=.020) predicted Masculinity scores (Table 3, 4). However, the proportion of explained variance was only 7.3%. Non-believers in the Slovak sample were significantly more masculine than believers. This finding contrasts with assumptions by Hofstede (2001), which would predict the opposite pattern of results. Also, there was a significant gradient along residence size, with the highest masculinity scores recorded from participants from small villages and lowest from participants from big cities, including the capital city. In conclusion, our data shows that there is a lack of evidence that the difference between Czechs and Slovaks in Masculinity is caused by an underlying demographic factor, or a combination of such factors.

| Table 3: Overall evaluation of the model predicting Masculinity from demographic variables |
|---------------------------------|--------|------|------|
| Model 1 (Slovak Republic)       | 0.269  | 0.073| 3.035| <.012 |
| Model 2 (Czech Republic)        | 0.223  | 0.050| 2.034| <.076 |

3 Some of our results might be biased by FDR.

4 In reference to section “Results”, sub-section 3.

5 We created these two groups based on participants’ self-assessment which in some cases did not correspond to their formal religious affiliation (e.g., a baptised Catholic declared to be a non-believer).
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Table 4: Regression coefficients of predictors in two models predicting Masculinity from demographic variables

| Model 1 (Slovak Republic) | B       | SE(B) | β     | t     | p     |
|--------------------------|---------|-------|-------|-------|-------|
| Education level         | 6.718   | 7.190 | .066  | .934  | .351  |
| Residence size          | -7.314  | 2.725 | -.189 | -2.684| .008  |
| Religion                | 16.692  | 7.117 | .165  | 2.345 | .020  |
| Age                     | -.131   | .239  | -.039 | -.546 | .585  |
| Gender                  | -8.910  | 6.938 | -.090 | -1.284| .201  |

| Model 2 (Czech Republic) | B       | SE(B) | β     | t     | p     |
|--------------------------|---------|-------|-------|-------|-------|
| Education level         | 15.597  | 7.860 | .142  | 1.985 | .049  |
| Residence size          | -3.247  | 2.780 | -.083 | -1.168| .244  |
| Religion                | 13.198  | 9.003 | .104  | 1.466 | .144  |
| Age                     | -.153   | .272  | -.040 | -.564 | .573  |
| Gender                  | -11.422 | 7.817 | -.104 | -1.461| .146  |

B – non-standardised regression coefficient, SE(B) – standard error of non-standardised regression coefficient, β – standardised regression coefficient

2.) Can we explain differences in Masculinity by underlying differences in Schwartz’s value types?

To see which value types were correlated with Masculinity, we conducted a series of non-parametric correlational analyses (Spearman) with MAS and first and second level value indices for both countries. As for the first level values, there were only very weak correlations between these values and masculinity, with correlation coefficients (r) ranging between .018 (Hedonism) and .194 (Achievement). This did not change when we split the sample by countries (highest .153 for SK/Achievement and .247 for CZE/Power, p<.001 and .199 for CZE/Achievement, p=.005; Table 6), or when we correlated MAS with second-level values of self-enhancement (r between -.030 and -.174).

A weak relationship between Masculinity and Schwartz’s value types was also confirmed by multivariate regressions (the Enter method) with masculinity and value scores for each country separately. Neither model was statistically significant (SK: F(10,189)=1.372, p= .196, CZ: F(10,189)=1.601, p=.109).

In order to see whether differences in Masculinity can be explained by a combination of demographic variables and value types, we conducted another series of the Stepwise multiple regression analyses. This type of analysis was chosen in order to see if some independent variables will show some significance according to statistical criteria in predicting Masculinity. The Slovak model was identical to the one referenced above, with only demographic variables – residence size (β=-.196, p=.005) and religiosity (β=.153, p=.028) being significant predictors of Masculinity scores (Table 5), but no value types (SK: F(2,197)=6.16, p=.003). Just as before, the Czech model did not include any demographic variables (CZ: F(1,198)=4.00, p=.047). However, Power now showed up to be a significant predictor of Masculinity scores (β=-.218, p=.002; Table 5). Again, these models explained a rather small portion of the overall variance associated with Masculinity scores (5.9% for Slovaks and 6.6% for Czechs).
Similarly, as in the previous section, our findings do not provide evidence that MAS differences between Czechs and Slovaks can be simply accounted for by reference to underlying Schwartz value types.

3.) Can we explain underlying MAS differences through item analysis?

As a second alternative explanation of MAS differences between Czechs and Slovaks, we investigated the contribution of individual item scores to the overall result. As 3 of the 4 item values making up Hofstede’s Masculinity index had practically identical mean scores across the Czech and Slovak samples (in one feminine (no.5) and two masculine (no. 3 and 10) items), we only focused on item 8, which was significantly higher in Slovakia than in the Czech Republic. Due to the nature of the MAS index calculation, it was not possible to simply exclude it from the analysis and compute the index based on the three remaining items. In order to minimize the potential contribution of item 8 to the overall MAS index, we set it to a neutral value for each participant (3 on a 5-item scale). Next, we computed a new masculinity score (MAS_new) and conducted all of the above analyses with this score.

First of all, the difference between Slovaks and Czechs on Masculinity was no longer statistically significant (U=18592, p=.209), with Slovak new MAS value reaching 27.83 and Czech MAS value reaching 23.28 points (difference of 4.55 points).

As for the association of the new Masculinity score with demographic variables, a multiple regression analysis (the Enter method) showed a minimal change to the same analysis with the original Masculinity scores (in section 3.1). Again, only the Slovak model was significant ($F_{(5, 194)}=3.073, p=.011$), with only one significant variable - residence size ($\beta=.148, p=.037$). As for religiosity, there was now only a trend ($\beta=-.125, p=.077$). In addition, there was also a trend for age ($\beta=-.132, p = .068$).

Interestingly, the correlations between new Masculinity (new MAS) and Schwartz’s first level value types (section 3.2) were now stronger, with the predicted value types and in the predicted directions. Specifically, the two strongest correlations with the new Masculinity value were with Achievement ($r_s=.393$) and Power ($r_s=.329$), both $p<.001$. A similar increase was seen for second-order values: both Self-enhancement and Openness to Change correlated with Masculinity with their respective correlation coefficients .393 and .282, both at $p<.001$. This was also the case when we looked at the results per country (Table 6). For Slovakia, the strongest correlations were found for Achievement ($r_s=.417, p<.001$) and Power ($r_s=.280, p<.001$). For second-order values, the strongest correlation was between the new Masculinity and Self-enhancement ($r_s=.375, p<.001$) and Openness to Change ($r_s=.245, p<.001$). For the Czech Republic, the same two first-order values correlated with Masculinity most strongly:

### Table 5: Regression coefficients of predictors in two Stepwise models predicting Masculinity from demographic variables

|                | B     | SE(B) | $\beta$ | t    | p     |
|----------------|-------|-------|---------|------|-------|
| **Model 1 (SR)** |       |       |         |      |       |
| Residence size | -7.57 | 2.67  | -1.196  | -2.83| .005  |
| Religion       | 15.47 | 6.99  | 0.153   | 2.21 | .028  |
| **Model 2 (CR)** |       |       |         |      |       |
| Residence size | 15.44 | 7.72  | 0.141   | 2.00 | .047  |

B – non-standardised regression coefficient, SE(B) – standard error of non-standardised regression coefficient, $\beta$ – standardised regression coefficient.
Achievement ($r_s=.359, p<.001$) and Power ($r_s=.379, p<.001$). In addition, Stimulation correlated at about the same level ($r_s=.304, p<.001$). Just as for Slovakia, Self-enhancement ($r_s=.400, p<.001$) and Openness to Change ($r_s=.318, p<.001$) were the two second-order values most strongly correlated with Masculinity.

Table 6: Correlation ($r_s$) between Schwartz’s value types and MAS and new MAS scores in two samples

|                | SVK (n=200) MAS | new MAS | CZ (n=200) MAS | new MAS | All (n=400) MAS | new MAS |
|----------------|----------------|---------|----------------|---------|----------------|---------|
| Conformity (S1) | -0.026         | -1.63*  | -0.086         | -2.10** | -0.042         | -1.84** |
| Tradition (S1)  | 0.089          | 0.014   | 0.043          | -0.043  | 0.066          | -0.015  |
| Benevolence (S1)| -0.08          | -1.43*  | -0.072         | -1.55*  | -0.051         | -1.40** |
| Universalism (S1)| -0.065     | -0.127  | -0.048         | -0.131  | -0.049         | -1.27*  |
| Self-direction (S1)| -0.121       | -1.90** | -1.52*         | -2.38** | -1.123         | -2.09** |
| Stimulation (S1)| 0.016          | -2.00** | -0.13          | -3.04** | -0.062         | -2.53** |
| Hedonism (S1)   | -0.001         | -2.06** | -0.075         | -2.11** | -0.018         | -2.01** |
| Achievement (S1)| -1.53*         | -4.17** | -1.99**        | -3.59** | -1.94**        | -3.93** |
| Power (S1)      | -0.025         | -2.80** | -2.47**        | -3.79** | -1.30**        | -3.29** |
| Security (S1)   | 0.03           | -0.07   | 0.001          | -0.079  | 0.027          | -0.069  |
| Self-transcendence (S2) | -0.084   | -1.56*  | -0.065         | -1.50*  | -0.054         | -1.44** |
| Self-enhancement (S2) | -0.094 | -3.75** | -2.39**        | -4.00** | -1.74**        | -3.93** |
| Conservation (S2)| 0.049         | -0.078  | -0.009         | -0.123  | 0.03           | -0.99*  |
| Openness To Change (S2)| -0.034 | -2.45** | -1.55*         | -3.18** | -0.088         | -2.82** |

Legend: * $p < .05$, ** $p < .01$

Likewise, these new models put forward in regression analyses were now able to explain a much higher percentage of variance in Masculinity. After entering the same predictor variables as with the original Masculinity score, the model with the best fit contained only Achievement ($\beta = -.33$, $p<.001$) and Conformity ($\beta = .116$, $p=.018$), explaining 14.6% of variance ($R^2 = .146$, $F(2,397)=34.07$, $p<.001$). Since we were mainly interested in both Achievement and Power, we also looked at the model when Power was added. When Conformity was replaced with Power, the model explained 14.4% of variance, i.e. virtually identical amount as with Achievement and Conformity ($R^2 = .144$, $F(2,397)= 33.27$, $p<.001$). Namely, Achievement ($\beta = .282$, $p<.001$) and Power ($\beta = .128$, $p=.039$) significantly predicted the new Masculinity values. For second-order values, there was only one fitting model ($R^2 = .14$, $F(1,398)=64.63$, $p<.001$), with Self-enhancement explaining 14% of total variance in the new Masculinity ($\beta = .374$, $p<.001$).

In addition to regression analyses, we also conducted more conservative multiple regression analyses with the new Masculinity score and Schwartz’s value types, which partly confirmed these results. Again, the models improved significantly, with both being statistically significant this time (SK: $F(10,189)=4.098$, $p<.001$, CZ: $F(10,189)=3.730$, $p<.001$). For Slovakia, Achievement was a significant predictor of the new Masculinity score ($\beta=-.349$, $p<.001$). In contrast to simple correlations, Power was not associated with Masculinity anymore ($\beta=-.050$, $p=.605$). For the Czech Republic, none of the values correlated with the new Masculinity, although there was a trend for Power at $p<.01$ ($\beta=-.190$, $p=.084$). Also, the percentage of explained variance has now more than doubled, although still remaining fairly low (SK 17.8%, CZ 16.5%).
Lastly, a general point pertains to the results of the PVQ questionnaire. In general, individuals differ substantially in the importance they attribute to the ten values put forward by Schwartz. Across societies, however, Schwartz (2006) notices surprising consensus regarding the hierarchical order of the values. The positions of self-transcendence to self-enhancement values and of openness to change to conservation values are supposed to be universally present. Across representative samples, using different instruments, the importance ranks for the ten values are also quite similar. Benevolence, universalism, and self-direction values are most important. Power and stimulation values are least important (Schwartz, 2006). The same distribution was (with minor discrepancies) replicated in both samples of our study (see Table 1).

Discussion

We have employed three strategies to investigate why there are differences in Hofstede’s Masculinity index between Czechs and Slovaks. Overall, the evidence suggests that demographic factors such as religious affiliation, gender and residence size were not major predictors of these differences. Rather, it was a single item (no. 8) on the VSM 2013 questionnaire. After minimizing the influence of this item on the MAS score, we found that not only did the large difference between Masculinity in Czechs and Slovaks disappear, but also that Masculinity was now better accounted by the two Schwartz’s values that we have predicted based on theoretical grounds: Achievement and Power. What remains to be discussed is whether the differences in item 8 are merely an artefact of the instrument (e.g. Czech and Slovak participants understood the item in systematically different ways) or whether this item taps into real and profound differences in Czech and Slovak cultures. In the following, we will comment on this issue, as well as on some of the other partial findings of this study.

Demographics, a weak predictor of Masculinity

The analysis of the Masculinity index in relation to demographic variables such as gender, age, education, religious affiliation and size of place of residence did not lead to any findings that would support our hypotheses about their relationships. We anticipated gender differences in MAS in our sample as Masculinity is (by definition) higher in males (Hofstede, 2001). Unexpectedly, once split by nation, only gender differences within the Slovak sample remained statistically significant, although relatively weak. Hence, differences in MAS between Czech men and women are lower in relation to Slovak men and women – notably, Czech women achieved higher MAS score than Slovak women. The same relationship between Masculinity and gender was observed regardless of whether we calculated it with or without item 8. Needless to say, all the observed effects were rather weak.

Hofstede (2001) connects higher MAS to populations with a Catholic tradition, and our results confirm this expectation. Religiosity represents one of the most remarkable demographic distinctions between Czechs and Slovaks, with Czechs ranking third in the Global Index of Atheism (Win Gallup International, 2012) and Slovaks characterized by a high proportion of religiously affiliated population, predominantly Catholic (Bunčák, 2001). Nevertheless, our data does not confirm Hofstede’s implicit formulation about the relation of atheism with Feminity. In the Czech sample, no significant relation was found while Slovaks demonstrated the opposite tendency – religiously non-affiliated individuals were scoring significantly higher in MAS, regardless of how it was calculated (with or without item 8).
We also found significant differences in MAS according to the size of the place of residence, although exclusively in the Slovak sample. The highest scores were recorded from participants from small villages and the lowest from participants residing in larger towns. A tentative explanation points to a historical context, in which Czechs, due to a German heritage law where the oldest child inherited land and property, witnessed the process of mass urbanization earlier in history. Slovaks, on the other hand, stayed connected to the land, which was divided to all members of the family. This delayed the development of cities, crafts and independent trade, relatively to Czechs who were more exposed to the development of urban culture (Lipták, 2011), which possibly stressed the importance of competition and individual achievement, in the past. Our historical explanatory hypothesis perceiving Slovaks in settings of close connection with land, well-defined masculine role and tradition, is congruent with the findings according to which Tradition together with Achievement was one of two dimensions with largest margin of difference between Czechs and Slovaks in the study of Ilgová and Ritomský (2009).

Instrumental adjustment

The lack of a solid explanatory structure after analysing the demographic factors and executing across-conceptual comparison (Hofstede-Schwartz) led us to focus on particular components of Hofstede’s MAS scale. VSM13 is a relatively new version used in a limited number of published studies so far; as a consequence, a limited number of references is available and none of those reaches item level. In addition, we did not have access to item loadings. Therefore, we decided to neutralise the influence of a single item, which was (a) the one where samples differed the most in their responsive tendencies, and (b) reported by Ripková and Masaryk (2015) as ambiguous in terms of interpretation of its meaning by both Czech and Slovak students. Our intervention has made Hofstede’s and Schwartz’s frameworks more congruent in the expected directions, even though the overall explained variance was still rather small – below 20 percent. This particular finding offers support to the assumption that the validity of differences in Masculinity between Czechs and Slovaks as measured by Kolman et al. (2003) and Bašnáková et al. (2016) is, at least in part, influenced by either a) methodological artefacts (instrumental validity) or b) construct bias (see below). Both deserve closer examination.

Concerning instrumental validity, we believe that it is unlikely that we introduced any significant bias due to translation as the questionnaire was subjected to a precise double translation procedure. We also do not expect our samples to manifest distinct response styles as for instance reported between the Japanese, North Americans and Nigerians by van de Vijver and Leung (1997).

Assessing whether these differences stem from lack of construct validity/bias is a more intriguing question. Item number 8 refers to the importance of “living in a desirable area when considering an ideal job”, and in its content it somehow ambiguously refers to both quality of life representing femininity, and social status that is closely linked to masculinity. The formula for computing the index treats this item as “feminine”; the other three items making up the index are “Get recognition for good performance” (item 3, Masculine), “Have chances for promotion” (item 10, Masculine) and “Have pleasant people to work with” (item 5, Feminine). However, item’s 8 position within the context of “imagine an ideal job” makes it quite ambiguous for the participants to discern between these two options, because “desirable” could be read as “desirable from the society’s point of view, i.e. a good address” or “desirable from a
personal point of view, i.e. where I experience high quality of life”. Is it possible that the Czechs and Slovaks (or central European countries in general) might find this item more ambiguous than other nationalities? It might be, since understanding the items in context of either “status” or “quality of life” could be in part influenced by their cultural world-views. In post-communist societies, location of residence can actually represent valid reference to class membership, and therefore social status, as in any other country. On the other hand, during the socialist era, properties were routinely allocated based on other criteria than social class (e.g. party membership, ethnicity) and this might also have implications up till today – adding a certain degree of ambiguity to the meaning of an item at least at the level of social representations.

Currently, we have no direct evidence to support this tentative explanation, even though one aspect of our data could be informative: Czechs and Slovaks have both high scores on item 8 in comparison to the Dutch (our control group), as well as much higher standard deviations. This suggests that there is a more homogeneous understanding of the item content among the Dutch population, while Czechs and Slovaks seem to be similarly divided in their interpretations between Masculine and Feminine reading of item 8.

Study limitations

Even though the two samples were representative of their respective populations, adding more participants could provide us with further insight into the Masculinity index; for example by allowing us to perform more detailed and sophisticated statistical analyses of the data split by the demographic variables. Adding more cultures to our data pool would broaden our referential frame. Opting for a random sample instead of relying on TNS participant panel could potentially improve the validity of our findings, as people who are willing to cooperate with polling agency may represent a specific part of the population.

Conclusion

In this study, we attempted to explain the differences between Czechs and Slovaks in Hofstede’s dimension of Masculinity in several different ways: through reference to underlying demography, another cultural framework of Schwartz’s value types, and by instrumental adjustment, e.g. neutralising the influence of an item which proved to be ambiguous between a masculine and a feminine reading. Our findings are best explained by reference to this problematic item, which calls into question the validity of the Masculinity dimension. The main contribution of our study is that we highlight the theoretical possibility that while the dimension of Masculinity might be culturally universal, the items devised to measure it could have culture-specific content. This has potentially far-reaching consequences for future uses of the Cultural Values Survey model. As we show in our analysis, it is advisable not to take large differences on CVS between countries – especially geographically and culturally close ones - at face value, but to employ additional “checks” by referencing results to other cross-cultural frameworks, such as Schwartz’s PVQ.
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