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## **Cultural Diversity in Meta-Cognitive Beliefs about Learning: Within-European Similarities and Differences?**

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### **Abstract**

Previous work on cross-cultural differences in the domain of education, has primarily studied Western (European) and Asian cultures or comparisons thereof. Current internationalization trends in higher education however call for a greater understanding of possible within-European cultural differences in the domain of learning. The current paper therefore addresses the question how culture influences the beliefs of Western and Eastern European students. The studies are based on the theory that the beliefs of students and faculty in the Western cultural context can be characterized as primarily 'mind oriented', whereas previous research has indicated that the beliefs of East-Asian academics has a stronger 'virtue orientation'. In the mind orientation, the development of one's cognitive thinking skills is at the heart of the concept of learning. In the virtue orientation, learning is primarily seen as a process of social and moral development of the person. Since the psychological literature has not yet reached a consensus on the degree and domains in which cultural differences emerge across the Eastern and Western European regions, a two-fold survey study was conducted in the Eastern European countries of Poland and Russia; and the Western European countries of the Netherlands and Germany. Students from both European regions were found to endorse mind oriented beliefs about learning more strongly than virtue oriented ones on the level of both attitudes and behavioral intentions, pointing to a striking cross-cultural similarity across the European region in the domain of beliefs about learning.

### **Introduction**

Which characteristics are most important for students while pursuing their university studies? To be critical, persistent, creative, respectful, diligent, or smart? Different people may answer this question differently, but all students and teachers have certain beliefs about which characteristics make a 'good' student. The kinds of ideas that both students and teachers have about what learning should be like are called meta-cognitive beliefs about learning. Previous research has found that on a cultural level, two orientations emerge that describe a qualitative difference in these beliefs across East-Asian and Western contexts. The overarching theme that has been found to characterize the orientation in meta-cognitive beliefs about learning for Western academics has been termed as a 'mind orientation' towards learning (Li, 2005). The essence of this orientation is the belief that learning is primarily concerned with the development of the mind, and a good student thus possesses mental skills such as creativity and intelligence. Learning may however also be thought of as a process of personal development that does not only include the cognitive domain, but encompasses social and moral aspects as well. This latter orientation has been found to capture the beliefs of East-Asian students and has been characterized as a 'virtue-orientation' (Li, 2005).

The existence of cultural orientations in meta-cognitive beliefs about learning is highly relevant in the context of increasing international student exchange in higher education. In the European context, the transition of post-Communist countries to the European Union has boosted the within-European rate of international academic exchange (European Union Press Release, 2008; Lane & Kinser, 2012; Student Statistics Federal Statistical Office, 2007). The participation of increasing numbers of Eastern European students in Western European institutions of higher education calls for insight into the way students from diverse cultural backgrounds conceptualize learning.

In order to develop a well-founded understanding of the influence of culture on meta-cognitive beliefs about learning of students in the European context, we build on the mind – virtue orientation framework to explore the cultural orientation of the meta-cognitive beliefs about learning of students from two large Central/Eastern European countries: Poland and Russia. The orientation that students from these countries endorse will be compared with each other and with the orientations of students from two Western European case-countries: Germany and the Netherlands. Because of the exploratory nature of the studies, we will take a culture-equals-nation approach (Hofstede, 2001; Holtbrugge & Mohr, 2010). This approach allows us to examine within-regional differences that are neglected when comparing the Western European region as such with the Central/Eastern European one. Cultural variations that might have resulted from the different contextual factors that influenced each nation should therefore come to light in our analyses.

Like the majority of the cross-cultural literature, research on cultural differences in the domain of learning has primarily focused on comparisons between Western (US American or Western European) and Asian (primarily Chinese) students (for a comprehensive theoretical review see: Van Egmond, Kühnen, & Li, 2013). Cross-cultural literature in this domain that addresses the region of Central and Eastern Europe specifically is scarce. The Eastern European region however provides a particularly interesting context due to the macro-societal changes that characterize it (Ammermüller, Heijke, & Wößmann, 2005). Both Tudge, Hogan, Snezhkova, Kulakova and Etz (2000) and Holloway, Mirny, Bempechat and Li (2000) for example suggest that it is likely that values of conformity and compromise, which were conducive to successful socialization during communism, have changed in the direction of values that are needed to succeed in a market economy, like those of initiative taking and independence. Higher education plays an essential role in shaping these societies and transmitting societal values. Moreover, in the context of increasing within-European academic exchange, a solid understanding of the cultural orientation of students' meta-cognitive beliefs about learning in these countries is valuable in order to accommodate processes of intercultural communication in the academic classroom.

Next, we will provide a short theoretical introduction into the concepts of the mind and virtue orientation and will integrate literature that relates to cultural differences in beliefs about learning across the European region. The hypotheses for our empirical investigation are based on this review.

### **Cultural Orientations In Meta-Cognitive Beliefs About Learning**

The vast majority of studies that have been conducted on cultural differences in learning juxtapose the Western 'Socratic' cultural context with the 'Confucian' legacy, which has shaped the East Asian region (Tweed & Lehman, 2002). The theory of the mind and virtue orientations aims at broadening this perspective. In fact, the foundational study by Li (2003) revealed that the size and basic structure of the mental construct of learning is similar for both Western and Asian students. The domains of the concepts of learning that her analysis revealed were labeled as the purposes (e.g., what people think the goal of learning is; whether or not and why learning is important), processes that are assumed to underlie learning (e.g., which strategy to apply), affect and motivation (e.g., whether one experiences joy or dread from learning and from successes and failures), and social perceptions (e.g., the perception of successful learners vs. unsuccessful ones and perceptions of teachers). The content of these categories that are used by the European American and Chinese students in China however differed systematically and qualitatively. The American students were found to give primary importance to characteristics of the individual that enable a person to acquire knowledge, such as cognitive skill, intelligence, but also thinking, communicating and active engagement in the classroom. For Chinese students, Li (2003) found that the most central elements of the content of their beliefs about learning pertained to a personal-agentic dimension such as diligence, self-exertion, and endurance of hardship, perseverance, and concentration. These characteristics include a moral and virtuous orientation and take prevalence over the mere cognitive elements in the pursuit of learning. In addition to the objective mastery of academic subjects, good learning aims at the unity of knowing and morality in the view of this orientation. Knowledge itself and the process of acquiring it are evaluated by the contribution they make to society. Li (2003) therefore conceptualized the theme that the meta-cognitive beliefs about learning of Chinese students center on as 'virtue-oriented'.

We used the established mind-virtue orientation distinction to study learning beliefs of Western versus Eastern Europeans. We however acknowledge that predictions about cultural differences or similarities between these regions are difficult to make given the inconclusive and sometimes even contradictory findings that emerge from previous studies on related topics. For example, some studies are based on an expected cultural similarity across the Eastern and Western parts of the European region, since prior to the introduction of Communism, Eastern European societies identified themselves largely with Western Europe's cultural, religious, and intellectual heritage (Whitmarsh & Ritter, 2007; Varnum, Grossmann, Katunar, Nisbett, & Kitayama, 2008). In this line of reasoning, it would be plausible to hypothesize that Eastern Europe shares the Socratic tradition, which has been found to be related to the way learning is conceptualized in the West (e.g., Tweed & Lehman, 2002; Li, 2003). Several empirical studies find support for this line of reasoning. Related to the domain of learning specifically, Szejnberg, den Brok and Hurek (2004) found that the preferences of Polish students in teacher-student interpersonal behavior are largely similar to the preferences of students from Western regions, such as the Netherlands, Australia and the US. Polish students only indicated that teachers should provide slightly more responsibility and be slightly less strict than students from other countries reported. These authors therefore suggest that, when it comes to interpersonal teacher-student behavior, only minimal cultural differences exist between the perceptions of Polish students and those from other regions. A study that examined the beliefs of Polish university students towards the specific sub-domain of learning, that of creativity, also found that Polish students valued the more Western traits of this concept whereas Chinese students did so less. (Rudowicz, Tokarz, & Beauvale, 2009). Similarly, Rudowicz and colleagues found that Polish students attach a high desirability to cognitive abilities, such as being smart, curious, and inventive. These characteristics are also reflected in the mind orientation. Together these findings may lead to the expectation that Polish students value mind-oriented beliefs about learning more strongly than virtue-oriented beliefs, just like their Western European counterparts in Germany and the Netherlands. Other recent work by Lammers, Savina, Skotko and Churlyaeva (2010) also speaks in favor of a high degree of cross-cultural similarity in the perception of 'good' learning at the university level between a typically Western (USA) and post-Communist (Russia) context. Here, it was found that knowledgeable, respectful, effectively communicating and creative teachers are perceived as the most skilled instructors in both cultural settings. These characteristics thus also concur on the theoretical level with the mind orientation towards learning.

So far, we reviewed empirical evidence, which points in favor of the similarity between Eastern and Western European cultural beliefs. The available literature does however also contain studies that provide counter-evidence to this interpretation and suggests cultural differences between regions within the European continent, as well as within the Eastern European region. Most recently, Holtbrügge and Mohr (2010) for example found that cultural values are related to learning style preferences of students from a diverse range of countries, including those of Germany, the Netherlands, Poland and Russia. In particular, students' individualism was found to be related to a preference for active learning style and focus on abstract conceptualizations. The cultural values of power distance, uncertainty avoidance and long-term orientation however explained less variance in individual learning style preferences. The notion of a higher degree of collectivism among Eastern as compared to Western Europeans is also supported by a recent study by Kokkoris and Kühnen (2013) who found the former to hold more interdependent self-views than the latter. In a domain that is closely related to that of cultural beliefs about learning, research on cognitive styles suggests that East Europeans have more in common with East Asians than with Americans or Germans. Kühnen, et al. (2001) have for example shown that the visual attention pattern of Russians is more holistic than analytic. Since analytic thinking skills have been linked with the (mind-oriented) emphasis on critical thinking skills (Lun, Fischer & Ward, 2010), it could be hypothesized that the more holistic cognitive style of Eastern Europeans is incongruent with this formal logical tradition that is integral to the mind orientation. More recently, Varnum et al. (2008; 2010) found additional supportive evidence that Central and Eastern Europeans tend to be more holistic in their thinking than Western Europeans and North Americans. The patterns of cognition of Central and Eastern European students were found to be more holistic on a categorization task and two visual attention tasks. One aspect of analytic

(as opposed to holistic) thinking is the strong desire for cognitive consistency which is for instance manifested in dissonance reduction after preliminary choices. Heine and Lehman (1997) for example found Canadian participants to justify their choices ex-post more than Japanese respondents did. Using an almost identical experimental paradigm, Kokkoris and Kühnen (2013) recently found stronger dissonance reduction among Eastern as compared to Western Europeans, supporting the argument of higher degrees of holism among the former (Varnum, et al, 2008). Although these studies are not directly related to learning beliefs, one might argue that the Western Europeans' stronger need for cognitive consistency reflected in these findings implies a stronger general preference for formal logic in reasoning and a more pronounced willingness to challenge contradictions in argumentation, both of which are aspects of mind orientation. Furthermore, Kolman and colleagues (2002) not only found important differences between the value orientations of Western European (Dutch) and Central European students, but also within the four Central European countries included in their study (Czech Republic, Hungary, Poland and Slovakia). All Eastern European countries for example tended more strongly towards masculinity than femininity and power distance and uncertainty avoidance were found to be exhibited more strongly in these societies as well, although these values could be expected to relate to beliefs about learning to a lesser extent based on Holtbrügge and Mohr's (2010) results.

Following this line of reasoning, it could be hypothesized that the beliefs about learning of both Polish and Russian students in the current study would be less mind-oriented and more virtue-oriented than the beliefs of Dutch and German students. After all, it is unlikely that critical thinking skills that are applied to questioning the words of authorities are valued in cultures in which the social order and the maintenance of harmony in social relationships is central, as is the case of societies that are oriented towards collectivistic cultural values. Instead, this is a tradition that can only flourish when the independent evaluation of knowledge regardless of the social status of the transmitter of this knowledge, is acceptable. This mind orientation characteristic thus reflects individualist cultural values.

In support of this expectation is the fact that differences between the countries existed prior to 1989, with Poland for example being among the most liberal and Western-oriented societies. Moreover, the communist political structure was merely imposed on the societal level here, but its values were not endorsed on the personal and psychological level. Recent large-scale research has also found the Eastern European countries to still represent distinct cultural regions from Western Europe in the domain of values (Inglehart & Welzel, 2005; Schwartz & Bardi, 1997). Other studies however suggest that this difference in values primarily persists for individuals who have actually been raised during the time of the Cold War, not the younger generations (Van Herk & Poortinga, 2012).

To summarize, the above review provides an ambiguous answer to the question whether cultural differences might be expected between Western and Eastern European students in their beliefs about learning. Evidence was found both in favor of a cultural difference and in favor of cultural similarity between these regions. In an effort to resolve this ambiguity in the domain of meta-cognitive beliefs about learning for young, contemporary students a survey study was designed to measure these differences empirically. Given the theoretical ambiguity, it is possible to formulate predictions for the current study on mind and virtue orientation among Western and Eastern Europeans in equally plausible directions. Hence, we abstain from making a specific prediction and regard the current investigation as rather exploratory in nature. Therefore, we simply applied the materials that were created for previous studies, which revealed clear cultural differences between Germans and Chinese (Van Egmond, 2011). For the present studies, the rating scale by which both mind and virtue orientation can be measured on an attitudinal level, as well as the scenarios for which participants are asked to make behavioral predictions were conducted in Poland, Russia, Germany and The Netherlands. First, Poland was selected as a case-country, based on its post-Communist background, combined with a Catholic tradition. Russia is more secular when it comes to work ethics. However, this influence that was superimposed during communist times does not prevent the Orthodox religion from having significantly shaped people's contemporary beliefs regarding the meaning of work and the need for mental evolution of the individual into the direction of Orthodox religiosity in contemporary Russia (Böhmer, 2008). However, whether or not the



difference in religious backgrounds will be expressed in a difference in orientation of philosophically inclined meta-cognitive beliefs about learning is a question that is yet to be explored. Moreover, Russia is the country with the largest cultural influence in the region, which makes it an interesting context to study in and of itself. All in all, the high diversity in both societal and religious characteristics of the included countries would make it highly likely that differences in cultural orientations of meta-cognitive beliefs about learning would emerge between these countries. Lastly, Germany was included as a first case-study for Western Europe since it is the largest non-English speaking Western European country in the number of receiving foreign students (OECD, 2010). The Netherlands was included to assess whether the results that are obtained from Germany would hold in a different Western European setting. An 18-item Likert rating scale was applied in all samples, which measures both the mind and virtue orientation of students' beliefs about learning on an attitudinal level. Secondly, a behavioral scenario questionnaire was included to obtain an indication of behavioral preferences of students in concrete, everyday academic situations. Overall the study had a 4 (culture: The Netherlands, Germany, Poland, Romania) by 2 (orientation: mind, virtue) factorial design with culture as a between-, and orientation as a within-participants factor.

## Methods

### Participants

The total sample consisted of 313 students from four countries: the Netherlands, Germany, Poland and Russia. The Dutch sub-sample consisted of 70 participants (36 female, 34 male), with a mean age of 21 years ( $M = 21.03$ ,  $SD = 2.18$ ). All participants were enrolled at the University of Groningen at the time of the study. Students from a range of disciplines were represented with the largest sub-sample of participants enrolled in a business / economics major (46.7%). Another 30% of the sample was enrolled in a medical major and only 18.3% studied a social science discipline, such as sociology, psychology or pedagogy. The German sample was recruited through a student mailing list at the University of Osnabrück (a public university in Northern Germany) and resulted in a total sample of 101 participants (76.2 % female)<sup>1</sup>. The mean age of the sample was 22 years ( $M = 22.84$ ,  $SD = 4.26$ ) and students were enrolled in the social sciences (21.2 %), humanities (20 %), business / economics and law (30.6 %), and biomedical / engineering / technological sciences (28.2%). The Polish sample consisted of 81 participants in total, with a mean age of 23 years ( $M = 23.6$ ,  $SD = 3.87$ ). Female students were over-represented here (75%), but students were recruited at both public (66.3 %) and private institutions. Russian participants ( $n = 58$ ) were recruited in Yaroslavl (Yaroslavl Pedagogical University, 65.5%) and Samara (State Inter-regional Academy for Social Sciences and Humanities, German and English department, 29.3%). The mean age was 20 years ( $M = 20.12$ ,  $SD = 2.65$ ) and included only 13% of males.

### Material

All participants completed the mind – virtue orientation scale and behavioral scenario questionnaire in their native language. Translations were created using the forward- and back-translation method. The attitudinal rating scale consists of 18 items; nine measuring mind-oriented beliefs about learning and nine measuring virtue-oriented beliefs about learning. Agreement with each item was indicated on a 7-point Likert scale, ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). The behavioral scenario questionnaire consisted of nine scenarios that describe situations that students will typically encounter at some point during their university studies. In each scenario a hypothetical student was described who found him/herself in an everyday academic situation in which the protagonist has to make a behavioral decision between a mind oriented and a virtue oriented way of acting (e.g., *Samantha is attending a Psychology lecture. The professor is explaining one of the classic theories, developed by an authority in the field. She however recognizes that she has a doubt about the theory. What should she do?*). The names of the protagonists were adjusted in each translation to reflect common names in the countries at hand.

<sup>1</sup> The full sample that participated in fact consisted of 336 students. However, in order to create a sample that was comparable in size (and thus degrees of freedom) to the samples from the other countries that are included in this study, a random sample of 30% was drawn. Only this 30% of the full sample of participants is included in the following analyses.

The questions that followed each scenario consisted of two subsections. First, students were asked to select either a mind-oriented option (1 in the example below) or a virtue-oriented option (2) that they would recommend as the most appropriate response to the described situation for the protagonist (Option 1 = Pursue her feelings of doubt and follow-up on it. She should express her thoughts openly and Option 2 = She should study the theory and the words of the authority better to make sure she fully understands the theory before expressing her thoughts openly). Secondly, participants were asked to rate the likelihood with which they themselves would engage in both the mind-oriented option and the virtue-oriented option (e.g., If you were Samantha, how likely is it that you would...) on a 7-point Likert scale, ranging from 1 (very unlikely) to 7 (very likely).

### Procedure

Dutch participants were approached by a research assistant at the university library and cafeteria and were requested to anonymously complete a paper version of the survey material. The German, Polish and Russian participants were sent a link to an online version of the survey by program coordinators at their university departments. All subjects participated voluntarily.

## Results

### Reliability

The reliability scores for all four samples reached satisfactory levels. The reliability scores of the mind and virtue-oriented items of the scale are reported per country in Table 1. For all four countries, the Cronbach's alpha scores are above the .6 threshold.

**Table 1**  
*Means and Cronbach's Alpha Scores by Country and Subscale.*

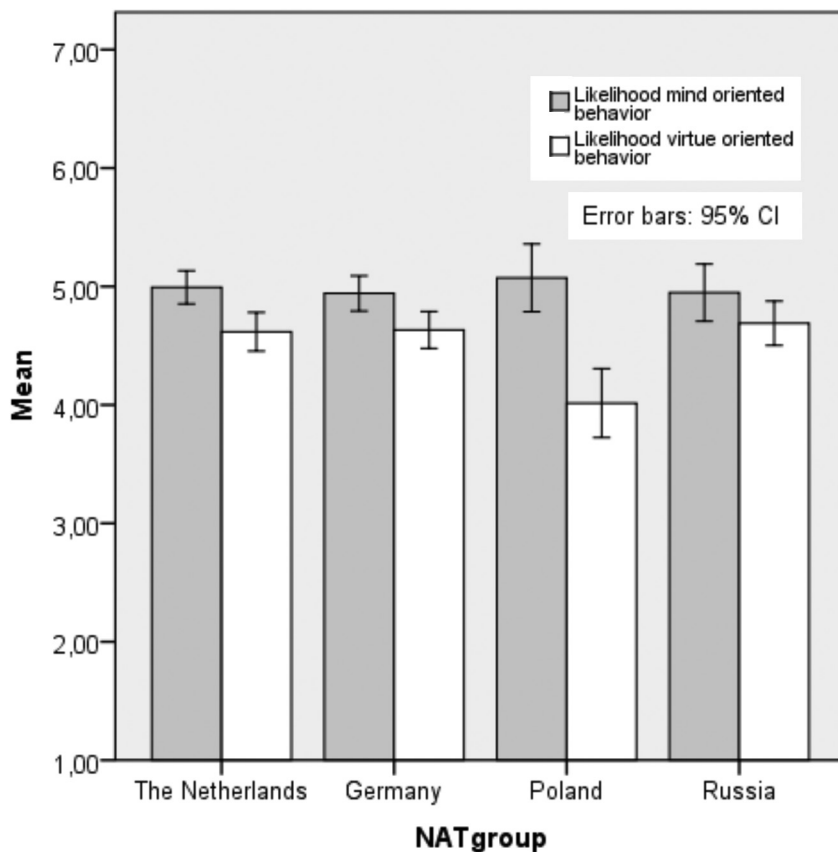
		The			
		Netherlands	Germany	Poland	Russia
Mind orientation	<i>M (SD)</i>	4.70 (.77)	5.38 (.71)	4.62 (2.1)	5.26 (1.0)
	<i>α</i>	.83	.71	.96	.78
Virtue orientation	<i>M (SD)</i>	4.43 (.65)	4.76 (.70)	4.04 (1.7)	4.84 (1.0)
	<i>α</i>	.77	.65	.91	.78
Full scale <i>α</i>		.88	.76	.97	.86

### Rating Scale: Mind And Virtue-Oriented Beliefs

The main research question was whether the beliefs about learning of students from the Netherlands, Germany, Poland and Russia are more mind-oriented or virtue-oriented and, if cultural differences could be found in the orientations of beliefs about learning between these groups of European students. To answer this question, the mean scores for mind and virtue orientation were submitted to an analysis of variance with culture (Dutch / German/ Polish / Russian) as between-subjects factor and orientation of beliefs (mind / virtue) as within-subjects factor to answer this question. This ANOVA revealed a significant main effect of orientation,  $F(1, 309) = 103.7, p < .001, \eta^2 = .25$ . As listed in Table 1, students from all four countries endorse the mind-oriented beliefs more strongly than the virtue-oriented beliefs (all four  $ps < .01$ ).

The analysis however also revealed a significant interaction effect between orientation and culture,  $F(3, 309) = 3.52, p < .05, \eta^2 = .03$ . This effect was however mainly driven by the Dutch sample. Fisher's least significant difference post-hoc tests revealed that with regard to mind orientation, students from the Netherlands scored lower than any other cultural group, while the remaining three groups did not differ significantly from one another. By contrast, with regard to virtue orientation the Dutch and Polish sample displayed lower scores (not significantly differing from one another) than both the German and the Russian

sample (which also were not significantly different from one another). As also evidenced by the small interaction effect, this effect was rather small. Additionally, it is important to recall that the study was conducted with the goal to identify potential cultural differences (or similarities) in the *relative* emphasis that people place on mind and virtue orientation, not on absolute differences across cultures. After all, the pattern of a higher endorsement of mind oriented beliefs over virtue oriented ones remains for all four samples. Lastly, within-subjects analyses of variance revealed that the possible mediating variables of gender and academic discipline did not result in a significant interaction with students' orientation beliefs in this study either.



**Figure 1.** Self-reported behavioral likelihood of engaging in mind and virtue oriented behaviors, by culture.

### Scenarios: Forced-choices of Appropriate Behavior

In order to look for potential cultural differences with regard to the behaviors that students see as the most appropriate course of action in the nine academic scenarios that they were presented with, the mean number of selected mind orientation options was submitted to a one-way analysis of variance with culture as between-subjects factor (Dutch, German, Polish, Russian). This analysis also yielded a significant effect,  $F(3, 274) = 7.30, p < .001$ . Post hoc comparisons using the LSD test revealed that the Polish students are the ones who select the mind-oriented behavioral option most frequently again. In all four samples, students thus express a preference for the mind oriented responses, as indicated by the finding that all mean scores are above the mid-point of  $M_{\text{mind options}} = 4.5$ . The degree to which they do so however differs.

### Scenarios: Predictions for Own Behavior

The two mean scores for the likelihood with which students indicate to engage in the mind and virtue-oriented behavioral responses were subjected to an analysis of variance with culture (Dutch / German / Polish / Russian) as between- and orientation as within-subjects factor. This analysis also yielded a significant effect for orientation,  $F(1, 297) = 73.58, p < .001, \eta^2 = .20$ . Students in all four countries predict to behave more like the mind-oriented than virtue-oriented ways in the described scenarios. This pattern of results is in the same



direction as the results of the attitudinal scale ratings. As illustrated in Figure 1, students from all four samples indicate higher likelihood ratings for the mind-oriented options than the virtue-oriented options. However, the analysis of variance also yielded a significant interaction effect for culture,  $F(3, 297) = 10.68, p < .001, \eta^2 = .10$ . LSD post-hoc comparisons reveal that it is primarily the Polish students who significantly differ from all three other groups (all  $ps < .05$ ) in their likelihood of engaging in virtue-oriented behaviors. Polish students indicate to be less likely to engage in these types of behaviors than students from both other countries. However, due to the comparably large standard deviation in this sub-sample, we abstain from speculations about the reasons for this finding.

**Table 2**

*Correlations Between Mind and Virtue Orientations Scores as Measured by the Scale and Scenarios in All Four Samples and the Respective Fisher r-to-z Transformation Scores*

	Scale measure	Scenario measure (Behavioral likelihood)		Z score
		Mind	Virtue	
The Netherlands	Mind	.37***	.10	1.58*
	Virtue	.11	.39***	-1.67*
Germany	Mind	.51***	.18	2.58***
	Virtue	.05	.37***	-2.3**
Poland	Mind	.35***	.09	1.63*
	Virtue	.17	.31***	-.89
Russia	Mind	.51***	.19	1.97**
	Virtue	.17	.35***	-1.04
Overall	Mind	.40***	.11*	3.73***
	Virtue	.11	.34***	-2.98***

\* $p < .10$  level (marginal significance) \*\* $p < .05$ . \*\*\* $p < .01$ .

### Further Analyses

We conducted correlational analyses in an attempt to assess the convergent validity of our measures. In other words, if a correlation is found between mind orientation as measured on the scale and the likelihood of engaging in mind oriented behavior as measured in the scenarios, this would support the convergent validity of both measures. Moreover, if this pattern is found in all four samples to the same degree, this would support the cross-cultural validity of the measures. Of course, the same holds true for the virtue orientation scale and the prediction to engage in virtue oriented behavior. By contrast, the discriminant validity of our measures would be supported, if the measure on the mind (virtue) orientation scale would not correlate with the prediction to engage in virtue (mind) oriented behavior. For this reason, Pearson's correlations were calculated between mind and virtue orientation as measured on the scale and the likelihood of engaging in mind and virtue oriented behavior as measured in the scenarios in all four samples separately. The hypothesis that follows from our above reasoning states that the scores for mind (virtue) orientation as measured on the scale would correlate significantly with the scores that are obtained for mind (virtue) orientation as assessed on the scenario measure. In addition, the correlations between the mind (virtue) orientation on the scale and the virtue (mind) orientation behavioral prediction should be smaller. As demonstrated in Table 2, the data support this prediction: Overall the mind orientation subscale correlated highly significantly with the behavioral intention for mind, but not for virtue oriented behavior, while the reverse was true for the virtue orientation subscale. This pattern of correlations was observed in all four samples. In terms of cross-cultural comparison, the largest discrepancy is found between the correlation for the mind orientation on both measures in Germany and Poland. A Fisher r-to-z transformation however indicates that this difference is not significant ( $z = 1.24, p > .05$ ). These findings thus support the convergent validity across cultures of the applied measures.

## Discussion

The reported study provides first empirical evidence for an overlap, rather than difference in culturally shaped meta-cognitive beliefs about learning across diverse European national contexts. That is to say that more than twenty years after the systemic changes that took place in the communist Eastern European countries, the current studies find remarkable similarity in students' perspectives on their academic studies. The study provides additional support for the hypothesis that the meta-cognitive beliefs about learning primarily take on a mind oriented focus across the European region. This study thus supports the finding that students from Poland as well as Russia are oriented towards the culturally Western mind orientation of learning that is also strongly endorsed in the Western European countries of Germany and the Netherlands. Despite relative differences in the degree to which mind orientation is preferred over virtue orientation, it is a rather robust finding that mind orientation takes prevalence over virtue orientation in the domain of meta-cognitive beliefs about learning.

The main cultural difference that emerged is in the degree to which primarily Polish students indicate to be likely to engage in virtue-oriented ways in response to common academic situations. They are less inclined to engage in these types of behaviors than either students in Germany, Russia or the Netherlands. These results are thus in line with the findings of Sztejnberg, den Brok and Hurek (2004) as well as those of Lammers et al. (2010) and Kowalski (2008) in the sense that they support the conclusion that the ideals for learning that exist in Western and Eastern European contexts are relatively similar.

On the attitudinal level, no cultural difference was found in the degree to which students from Western (German and Dutch) and Central / Eastern European countries (Poland, and Russia) endorse mind and virtue-oriented beliefs about learning. Students in all countries indicated to endorse the culturally 'western' mind-oriented beliefs about learning more strongly than the virtue-oriented ones. However, when it comes to behavioral intentions in concrete academic settings the orientation of Polish students slightly deviates from both the Dutch and Russian context in the sense that Polish students endorse virtue orientation to an even lesser extent than students from the other two countries do.

### Theoretical implications

On a theoretical level, our results are in line with the literature that suggests that historical traditions which relate back to the legacy of ancient Greek philosophy (and Socrates in particular) are shared in diverse European contexts. Our analysis reveals a rather robust emphasis that is placed on mind-oriented elements of the concept of learning over virtue-oriented aspects across the included Western and Eastern European countries. It is the ancient philosophical legacy that penetrates contemporary thought over and above temporary and super-imposed socio-political influences. This is remarkable, given that previous studies have also found similarities between Eastern Europeans and East Asians with regard to some aspects of cognitive functions, such as collectivistic values and holistic cognition (e.g., Varnum et al., 2008; Kokkoris & Kühnen, 2013; Kolman et al., 2002; Kühnen, et al., 2001). However, in line with recent studies that are related to cultural values and learning preferences, our findings suggest that there a high degree of similarity exists in the cultural orientation towards learning across Europe. This result also implies that the emphasis on virtue-oriented beliefs and learning-related behaviors that has been found for Chinese students may not be merely due to their collectivistic values or holistic cognition, but indeed may reflect the specifically Confucian heritage in learning beliefs.

### Practical implications

On an applied level, the findings have important implications in the domain of international academic exchange. In line with Van Herk and Poortinga's findings (2012) for the value orientations of young Europeans, the current study namely suggests that cultural beliefs about learning are highly similar for European student generations that have been born after the fall of Communism. The stereotypic beliefs of Western European faculty members who welcome students from Central and Eastern European countries into their classroom with the belief that they are at a disadvantage, due to the heritage of communism in these countries can be contradicted with our findings. In fact, our results indicate that students from Poland and Russia are equally willing

to engage in mind-oriented beliefs about learning as students from Western European countries are on both the attitudinal and behavioral level. Our results thus warn against the influence of such uniformed beliefs that faculty might have, because there is a risk that such beliefs can lead to self-fulfilling prophecies (see Jussim & Harber, 2005). Instead, the relative similarity that our study indicates should enable students and faculty members to take full advantage of the opening up of the European higher education landscape (Kühnen et al., 2012).

### Limitations and future research directions

The interpretation of our findings is limited by the fact that a lack of evidence in favor of the alternative hypotheses may not be understood as evidence in favor of the null hypothesis. It may for example be that the non-significant findings that we observed are due to the fact that cultural differences that might exist between students in these countries are not captured by the applied instrument. One might argue that there are specific Eastern European assumptions about learning that are not captured by the mind and virtue orientation measures. Moreover, cultural differences in other domains may play a role that is not captured by the mind and virtue orientation framework (e.g., pursuing a university education for the reason that it serves the purpose of finding a good job). Secondly, although the included samples were large enough to obtain meaningful results, it is questionable if samples of 70 or more students from each country form truly representative samples of each of the national academic climates. Future research should be directed at answering the question whether the results of the current study can be generalized to a wider population of non-university students as well. It would also be advisable to include students from an even more diverse range of countries, academic disciplines and types of higher education settings in order to assess differences that exist within the Eastern and Western contexts themselves. Additional attention could then also be paid to the development of the measures' validity.

In conclusion, the cultural similarity that is found in the beliefs and behavioral preferences of students from diverse West and East European countries that are each marked by large social, historical, religious and cultural variation is remarkable. Even though these cultures differ for example in the endorsement of cultural values (e.g., Inglehart & Welzel, 2005 or Schwartz & Bardi, 1997) and cognitive style (Varnum, Grossmann, Katunar, Nisbett, & Kitayama, 2008), we provide evidence that students from the Netherlands, Germany, Poland and Russia share the same meta-cognitive beliefs about learning to a large extent. This finding might be a tentative sign for a relatively harmonious integration of students from highly diverse European regions into a joint Western-oriented higher education system.

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