

Value Orientations and Studying in School-Leisure Conflict: A Study with Samples from  
Five Countries

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### Abstract

The relations between students' value orientations and experiences of motivational interference during studying following conflicts between learning and leisure activities were investigated in a self-report study. Overall, 1,075 adolescents, mostly from Catholic schools, in Bosnia-Herzegovina ( $n = 203$ ), India ( $n = 200$ ), Paraguay ( $n = 96$ ), Spain ( $n = 442$ ), and the US ( $n = 134$ ), participated. The samples varied substantially in terms of modern and postmodern value orientations, experience of motivational interference during studying, and time invested in studying. By controlling for age, gender, and economic capital, postmodern value orientation was positively related to conflict frequency and experience of motivational interference during learning, and negatively related to time investment. For modern value orientation, the relations were almost reversed. Despite the considerable differences between the sample means, the study revealed some consistency in the relations between the variables across the samples, which indicates that most of the relations can be generalized.

*Introduction*

Students often face situations in which multiple opportunities for different activities are available, but it is very difficult to realize them simultaneously. For example, students might be just about to do their homework when friends call and ask to join them and have some fun together. The motivational conflict induced by such events seems to be widespread amongst young people in Western societies (Fries, Schmid, Dietz, & Hofer, 2005; Randel, Stevenson, & Witruk, 2000). Nevertheless, this phenomenon has received little attention in research on learning motivation. In the few studies that have addressed the issue, conflicts resulting from the availability of attractive leisure alternatives can hamper optimal learning and personality development (Lens, Lacante, Vansteenkiste, & Herrera, 2005; Ratelle, Vallerand, Senécal, & Provencher, 2005; Senécal, Julien, & Guay, 2003). For a German sample, an individual differences model that connects students' value orientations with impaired learning regulation was able to explain the data (Hofer et al., 2007). The purpose of this study is to replicate the finding that students' value orientations are connected to the experience of motivational interference during studying after a conflict between learning and leisure. To test whether the relationships are stable over different cultural samples, five samples from nations with populations differing in wealth and cultural zone are included.

Our theoretical approach states that because of the intruding nature of non-chosen options the detrimental effects of interference work in both directions. We expect the pattern to be true regardless of the question whether the current activity is a learning or a leisure one. Students should be mentally distracted by the motivation to learn while being involved in a fun alternative. In a study with students from Croatia, Germany, India, Italy, and Mexico we asked them to report on the experience of motivational interference in cases when they chose the leisure option. Dependent on their value orientation, students experienced more or less motivational interference while staying with their friends (Hofer, Schmid, & Zivkovic, 2008). The pattern proved to be approximately the same across the samples. Hence, a goal of the

present study is to find out whether the same degree of generalizability holds also in the case of motivational interference during studying. So far, comparative studies on experiences during studying mostly did not include the notion of motivational conflict (Asakawa & Csikszentmihalyi, 1998; Helmke & Vo, 1999; Hoppe-Graff & Kim, 2004; Stevenson & Lee, 1990). We assume that in other than Western countries, conflicts between school and leisure-related activities also appear, but to a lesser degree. For instance, Japanese high school students indicated a much lower degree of interference of after-school activities with their study behavior than German students (Randel et al., 2000). Even if the notion of motivational conflict is regarded as typical for Western post-industrialized countries, schoolwork may compete with extracurricular activities in many cultures. Despite this, the relations between students' value orientations and motivational conflict variables are assumed not to differ substantially because they are involved in the same general phenomenon. We report a study of school-leisure conflicts in student samples from Bosnia-Herzegovina, India, Paraguay, Spain, and the US. We expected that in addition to variations in value orientations and motivational interference following school-leisure conflicts, the relationships between these variables would show a similar pattern across the samples. In the following, first the concept of motivational conflict is introduced, then the role of value orientations in academic learning is discussed, with special focus on intercultural differences. Finally, the hypotheses are stated.

#### *Motivational conflicts between school and leisure goals*

During adolescence, teenagers are expected to spend a large amount of time on their academic education. Simultaneously, they pursue, and are supposed to pursue, other personal goals in various domains, e.g., making friends and taking on family responsibilities (Nurmi, Poole, & Kalakoski, 1994). Investigations in various countries showed that a leisure activity might be pursued at the expense of homework or a different leisure activity (Alsaker & Flammer, 1999). As a result, young people are prone to having to make trade-offs between

learning and leisure activities. Psychologically, such a trade-off can be modeled as a motivational goal conflict which is defined as an inner state of uncertainty resulting from two or more behavioral means associated with conflicting goals (Dowson & McInerney, 2003; Kruglanski et al., 2002). Within the context of our research, two relevant aspects of motivational conflict are distinguished (Kuhl, 1983). (a) In situations in which students have two or more competing goals, they have to decide which goal to pursue, academic or leisure (selection conflict). A typical example is when students are unsure whether to start doing homework or to watch television. (b) The second variant is a situation in which the person, while already executing an action, is tempted by an emerging alternative (realization conflict). Such conflicts between academic tasks and leisure activities may occur whenever time resources are limited. In a study by Fries et al. (2005), only 11.4% of German adolescents indicated that they never experienced school-leisure conflicts, whereas the majority reported to experience such conflicts at least once a day.

Frequent goal conflicts are likely to have negative consequences in the actional phase. In research on personal goals, it is recognized that the habitual experience of goal conflicts is negatively associated with psychological functioning and life satisfaction (Emmons & King, 1988; Riediger & Freund, 2004). Following both types of conflicts stated above, we define the phenomenon of *motivational interference* at the state level as the (negative) influence of attractive alternatives on the ease of self-regulation in the current task (Fries, Dietz, & Schmid, in press). For instance, if students feel tempted to watch television instead of continuing with their homework, it is to be expected that their study behavior will suffer even if they continue doing homework. So far, only a few studies have investigated the possibility that leisure options may undermine work for school. In one study with German school students (Fries et al., in press), the experience of motivational interference was measured by means of items assessing distractibility, reduced persistence, switching, superficial learning, and bad mood. The more students valued a dismissed leisure activity, the more they reported

motivational interference in performing a learning activity. In the study with Canadian college students by Ratelle et al. (2005), the frequency of school-leisure conflicts was found to be associated with a lower desire to study, a lack of concentration in school, and greater feelings of hopelessness regarding academic matters. These negative effects of motivational goal conflicts may be explained by the fact that students who experience more conflicts will more often decide in favor of the leisure alternative and therefore invest less overall time in academic learning. Yet even if students faced with a goal conflict choose to learn, their efforts can be undermined by thoughts about the leisure activity left undone. As a consequence of motivational interference, the presence of alternative goals is expected to cause impaired learning. In an experimental investigation on motivational interference, the primary activity was a learning task and the distracting alternative was the rating of music videos (Fries & Dietz, 2007). The presence of alternative activities during students' learning increased motivational interference and had a detrimental effect on learning results. Fries et al. (in press) showed that this is also true if the current activity is a leisure one. Students were mentally distracted by the motivation to learn while being involved in a leisure alternative. More generally spoken, because of the intruding nature of non-chosen options, the detrimental effects of interference work in both directions.

The perspective of multiple motivations can build upon selected research traditions from literature, opening a new avenue in looking at academic learning. In order to understand why some students persist in their learning and others give up more easily, it is important to consider not only the students' level of learning motivation, but also competing action alternatives. In their dynamics of action theory, Atkinson and Birch (1974) assume that even if only one activity is performed at any given time, motivations for pursuing alternative courses of action are present. According to this theory, while performing one activity, the motivation for performing it decreases in proportion to the amount of time spent on it. At the same time, the motivation to perform one or more of the alternative activities will increase.

Literature on failure to regulate one's behavior points to the fact that distracting thoughts consume working memory capacity. Under conditions of goal conflict, students might find themselves drifting and unintentionally focusing on short-term goals instead of on the intended learning task (Fishbach, Friedman, & Kruglanski, 2003). This, along with the effort required to control intruding thoughts, consumes the individual's resources available for the activity being performed in favor of the long-term goal. A reduction of quality of the performed activity may follow (see Wegner, 1994). Dependent on the cognitive load imposed by alternative motivations, it may become easier to pursue the alternative activity rather than to continue performing the activity currently being pursued.

To sum up, there is evidence supporting the contention that students rather frequently face conflicts between academic and non-academic activities in their daily life, and that the motivation to perform an alternative activity may have negative consequences.

#### *Value orientations and school-leisure conflicts*

Boekaerts, de Koning, and Vedder (2006) criticize that the role of individual values has been largely neglected in research on academic learning. Individual values can be defined as general cognitions that may define a situation, elicit goals, and guide action. Values transcend specific actions and situations and provide general guidelines that influence choice and behavior (Smith & Schwartz, 1997; Verplanken & Holland, 2002). In which respect does the concept of values differ from other concepts used in motivational research? While goals refer to a specific content and mostly to specific situations, values apply across situations and domains. As values are cognitively represented by the individual (Fries, Schmid, & Hofer, 2007), they differ from implicit motives. Values may be considered explicit motives as they influence the initiation of goal-directed behavior (Covington, 2000). As a distinctive feature however, values have a normative base involving a dimension of goodness and badness whereas this component is not connected with a motive (Feather, 1995). Furthermore, the

value construct seems useful because it invites to conceptualize the prioritization between different values and allows connecting individual with cultural values.

We propose that students' value orientations influence the frequency of motivational conflicts and the degree of motivational interference that is experienced. Comparing different value conceptions in literature (Boekaerts et al., 2006; Hofstede & Hofstede, 2005; Inglehart, 1998; Schwartz et al., 2001)<sup>1</sup>, we found Inglehart's (1997) distinction between two orthogonal value dimensions to be especially relevant for the issue of school-leisure conflict: secular-rational authority values on the one hand and self-expression values on the other (see also Inglehart & Welzel, 2005). Secular-rational values include achievement, determination, thrift, and responsibility, while persons with high self-expression values judge free choice, friends, satisfaction, and leisure as important. These value dimensions are embedded in a theory of value change. Based on data from the world value surveys (containing large-scale studies in 43 countries), Inglehart (1997) showed that post-modern values gained importance in Western countries. Generation differences point to the fact that in Western Europe with younger age persons are higher in secular-rational and self-expression values (Inglehart & Welzel, 2005). There is, however, empirical evidence for a high approval of both value dimensions with students appreciating both values (Inglehart & Baker, 2000). This constellation is predestinated for motivational conflicts, since students are confronted with a lot of attractive leisure alternatives while at the same time education still is seen as important..In his theory of social saturation, Gergen (1991) suggests that the postmodern self is characterized by an increase of number and diversity of values individuals consider important. According to research on the values of American high school seniors, between 1976 and 1996 the importance of most values increased (Ovadia, 2003). This was especially true for values related to hobbies and experience. Perhaps contrary to expectations, values like success and work did not decline but, starting at an even higher level, rose, too. When considering that more values are deemed important, that choices have become more demanding, and parenting

has become more liberal, frequent conflicts between goals attached to different values are likely.

We conceived “modern” value orientation by adapting the Inglehart’s secular-rational dimension to students valuing academic, effort, and success. Conversely, we defined “postmodern” value orientation as a student’s preference for leisure and peers referring to the self-expression dimension (Dietz, Hofer, & Fries, 2007). In previous articles, these value orientations were named achievement and well-being values (Fries, Schmid, Dietz, & Hofer, 2005; Hofer et al., 2007). They are connected to students’ differential experiences of school and leisure activities. In an interview study by Schmid, Hofer, Dietz, Reinders, and Fries (2005), the students’ statements concerning the meaning of well-being could be structured into three categories: individual well-being (for instance, relaxing), well-being due to affiliation (e.g., well-being as a result of the company of friends), and well-being due to autonomy (for instance, absence of external pressure exerted by teachers). With regard to achievement, most adolescents mentioned “effort” and “outcome” as necessary requirements for ascribing achievement. The results of this study were consistent with our definition of a dimension of “modern value orientation” in which learning, effort, and success are deemed important, and a dimension of “postmodern value orientation” in which leisure time and well-being are central.

In previous studies we asked whether values and value conflicts are related to motivational conflict and motivational interference. School students typically were presented with hypothetical situations in which preparing for an upcoming test and going out with friends were in conflict with each other. Results showed that students with highly conflicting value orientations reported more school-leisure conflicts than students with either a low level on both modern and post-modern value orientation or with a configuration of substantially differing value orientations (Fries et al., 2005). We also found that students with high modern value orientations, when confronted with a school-leisure conflict, more often chose to

prepare for the test, while students with high postmodern value orientation more frequently decided to go out with friends, therefore delaying the learning task. The more students valued modern values, preferring the goal they were pursuing at that moment (studying), the less they experienced motivational interference. Conversely, the more students considered postmodern values important, the greater was the motivational interference that arose during learning, presumably because they preferred the option not chosen (Hofer et al., 2007). As a further result, students with high postmodern values had higher procrastination scores and less fixed time slots for learning activities. Conversely, students with high modern value orientation tended to follow daily routines for learning activities, thus reducing motivational conflicts (Dietz et al., 2007).

#### *Values and motivational conflicts in different cultures*

It could be shown that values and value changes are associated with income differences between given societies as well as with cultural zones. People in high-income countries, especially those in protestant Europe – like Germany – and in English-speaking countries – for instance, the US – had higher self-expression values than people in catholic European countries – like Spain –, ex-communist countries – for instance, Bosnia –, and countries from South Asia – like India. Low income societies, especially those from Africa, had lowest self-expression values. In contrast, secular-rational values were found to be highest in Confucian countries and in those from protestant Europe, medium in English-speaking countries (e.g., the US), catholic European (e.g., Spain), and ex-communist countries, while people from Latin America and Africa were lowest. In multiple regression analyses based on data from 64 countries, secular-rational values and self-expression values could be predicted to a high degree by the three predictors economic wealth, years under communist rule, and cultural zone factor (Inglehart & Welzel, 2005).

Even if the notion of motivational conflict is regarded as typical for Western post-industrialized countries, schoolwork may compete with extracurricular activities in many

cultures. Given lower postmodern values in other than Western countries, conflicts between school and leisure-related activities should be comparably less frequent. In fact, Japanese high school students indicated a much lower degree of interference of after-school activities with their study behavior than German students (Randel et al., 2000). Furthermore, students in Western countries generally experience enjoyment and well-being to a higher degree in leisure activities compared to school activities (Asakawa & Csikszentmihalyi, 1998; Stevenson & Lee, 1990), probably because a central feature of the concept of well-being is its “end-in-itself”-character while achievement-related activities are connected closer to the notion of an output. Students from Croatia, Germany, India, Italy, and Mexico varied considerably in their value orientations, frequency of school-leisure conflict, and motivational interference while staying with their friends. On the other hand, the relationships between value orientation and motivational interference during leisure proved to be approximately the same across the samples (Hofer et al., 2008). In the present study we want to show that the same degree of generalizability holds also in the case of motivational interference during studying. Because of the intruding nature of non-chosen options, we expect the pattern to be the same regardless of the question whether the current activity is a learning or a leisure one.

In sum, in the present study we expected students from the countries included to differ in their value orientations, frequency of school-leisure conflict, motivational interference during studying, and time investment according to their countries' wealth. On the other hand, the pattern of relationships should be similar across the samples.

### *Hypotheses*

In the study reported herein, we tested two major hypotheses.

(a) We hypothesized that in the entire sample the two value orientations would be linked to the frequency of motivational conflicts, experience of motivational interference, and time devoted to learning.

(b) We expected that the relations would hold for each of the samples from the countries Bosnia-Herzegovina, India, Paraguay, Spain, and the US. The countries were selected to maximize the variation within the variables included in the study. On the one hand, substantial mean differences between the countries regarding values and the frequency of motivational conflicts as well as differences in respect to the experience of motivational interference and to time invested in studying are expected. On the other hand, a common pattern complementary to that of the study by Hofer et al. (2008) is expected, with motivational interference occurring during leisure. Depending on their personal value orientations, students within each sample were expected to vary in the frequency of motivational conflicts they experience during learning. In any country, students who appreciate postmodern values should have a higher tendency to encounter conflicts and to experience motivational interference during studying if an attractive alternative activity is present. Hence, the second hypothesis states that, despite differences in living circumstances, the relations between value orientations and outcome measures stated above are present in each considered country.

## Method

### *The countries included*

The data were collected in 2005. At this time, all countries included in the study had a democratic political system. Bosnia-Herzegovina was undergoing a major shift from a socialist system toward a federal democratic republic. However, the countries were diverse in their economic development. Basic data from the world factbook show the economic differences among the countries (CIA, 2005).

In Bosnia-Herzegovina, national-level statistics are limited and do not consider black market activities. The country receives substantial amounts of reconstruction assistance from the international community. The estimated General Domestic Product per capita (GDP) was

US\$6,800 in 2005. A high unemployment rate poses a serious economic problem. India's economy experienced excellent growth rates in the decade 1994-2003, but about two-thirds of the workforce is still engaged in agriculture. The GDP was US\$3,400 in 2005. Paraguay has a market economy characterized by a large informal sector. A large percentage of the population derives a living from agricultural activity, often on a subsistence basis. The GDP per person was US\$4,900 in 2005. Spain's economy is highly developed, the agricultural sector accounting for only 3.4% of the GDP. The estimated GDP per capita was US\$25,100 in 2005. The United States of America have the largest and most technologically powerful economy in the world, with services occupying 78.3% of the GDP. The GDP per capita amounted to US\$41,800 in 2005.

Clearly, our study includes samples from both rich and relatively poor countries as well as from different political and cultural zones. Thus, from an Inglehart-perspective, the values of persons from different countries should vary substantially. From the perspective of a motivational conflicts approach, the range and availability of attractive alternatives should vary, too.

### *Participants*

In total, 1,075 students participated in the study, with the following distribution: Bosnia-Herzegovina ( $n = 203$ ), India ( $n = 200$ ), Paraguay ( $n = 96$ ), Spain ( $n = 442$ ), and the US ( $n = 134$ ). The students attended private Catholic schools run by Franciscans in Bhagalpur (India, with English as the language of instruction), Assuncion, Hernandarias, and San Astanis (Paraguay), Palma de Mallorca and Madrid (Spain), and Philadelphia (USA). The school in Orasje (the Croatian part of Bosnia-Herzegovina) was a public school in a small city.

The samples were gathered by contacting private schools run by Franciscans in the respective countries (except in Bosnia-Herzegovina). One coauthor, as a General of the Franciscan Third Order in Rome, organized the data collection. Students in these Catholic

schools came predominantly from middle class families. In India and Paraguay, the tuition for Franciscan schools amounts to US\$7 a month (or US\$73 for the entire school year), while in the USA it is about US\$8,000 per year. In all countries, children from poor families can attend Franciscan schools at no charge. In Spain, the teachers are paid by the government and no tuition fee is required. Catholic schools have a good reputation for providing a well-founded intellectual and moral education for their students.

At the time of testing, all students were in high school. The mean age of the participants was 15.6 years, with variations between and within samples. Bosnia-Herzegovina: 16.3 ( $sd = 1.0$ ); India: 14.9 (0.83); Paraguay: 15.0 (1.40); Spain: 15.0 (0.82); USA: 16.3 (1.06). As the samples differ somewhat in the ages of the students, age was statistically controlled for. The distribution of male and female students was somewhat biased toward boys, especially in India: 51.0% (Bosnia), 66.5% (India), 50.0% (Paraguay), 52.9% (Spain), and 54.5% (USA). Gender was also statistically controlled for.

Relevant differences in the education systems of the countries from which the samples were collected should be noted (International Association of Universities, 2007). The age of exit from compulsory education in Paraguay and India is 14, 15 in Bosnia-Herzegovina, and 16 in Spain and the US. The age of entry to secondary school is 12 in Spain, 13 in the US, 14 in India, and 15 in Bosnia-Herzegovina and Paraguay. Countries also differed in the degree to which secondary schools differed from each other. Therefore, the samples also varied, to some extent, with respect to the type of school attended. The differing percentage of the population receiving education in the studied countries must also be considered. In India, for instance, the literacy rate is about 60-70% (CIA, 2005; Saraswathi, Manjrekar, & Pant, 2003). In Paraguay, the completion rate of the nine years of compulsory education was only 47% in 1989 (Rivarola, 1994), while, for instance, in the USA, 74.1% of 17-year-olds graduated from regular high school programs in 1989 (Valverde, 1994). In view of the lower standards of literacy and lesser availability of education in the poorer countries, the students in our

samples from the poorer countries may feel more privileged and may take schoolwork more seriously.

### *Procedure*

In all countries, professional psychologists were responsible for the data collection. They were provided with information about the aim of the study as well as with step-by-step instructions for carrying out the survey. The students' participation in the study was voluntary. They filled out a questionnaire that contained both relevant instruments and some instruments that are unrelated to the issues reported in this paper. The study was conducted during two consecutive regular school lessons. The students were told that the goal of the study was to learn about their attitudes and feelings toward school, leisure, and life in general. Anonymity of all data was assured.

### *Measures*

Bilingual researchers translated the survey into Croatian, English, and Spanish to ensure that all students were able to understand it. Because of limited resources, back translation was not performed. The reliability of the instruments was tested separately within each country.

*Economic capital.* As the samples are not representative, an individual measure of economic capital was administered to check whether the students varied in their economic background in accordance with the variance in their countries' GDPs. Seven items were used from the PISA study (Kunter et al., 2003). The students had to indicate the number of cars, televisions, computers, cell phones, etc. they had at home. The internal consistencies were:  $\alpha = .68$  for Bosnia-Herzegovina,  $\alpha = .68$  for India,  $\alpha = .67$  for Paraguay,  $\alpha = .61$  for Spain, and  $\alpha = .63$  for the USA.

*Value orientations.* Modern and postmodern value orientations were measured by means of two descriptions of students representing value prototypes (see appendix). The prototype

items were presented in gender-congruent versions. Participants were asked to evaluate these value prototypes with respect to their similarity/dissimilarity to themselves on six-point Likert scales, ranging from *very similar* (5) to *very dissimilar* (0). The assessment of value orientations by prototypes (Schwartz et al., 2001) has turned out to be feasible for younger students, because it can be understood easily and is not as abstract as value statements (Bubeck & Bilsky, 2004).

*Frequency of motivational conflicts.* To obtain a measure of conflict frequency, one item asked how often the students experienced a conflict between school-related tasks and leisure activities. The situation was described as follows:

Some teenagers say that their time schedule after school is rather busy: On the one hand, they want to get many things done for school, but on the other, they also feel like engaging in various leisure activities. For this reason, it is sometimes hard for them to decide what they want to do. How about you? How often does it happen to you that in the afternoon or on weekends you don't know whether you should do something for school (homework, study for a test) or engage in a leisure activity (meet friends, play sports, watch TV, etc.)?

The participants gave their answers on a five-point scale with the options *less than once a week* (0), *about once a week* (1), *several times a week* (2), *about once a day* (3), and *several times a day* (4).

*Experience of motivational interference.* A vignette depicting a conflict situation involving school and leisure activities, contrasting the activities “learning for an exam” and “meeting friends”, was used:

Imagine the following situation. It is in the afternoon or on the weekend and you are just about to start studying for a test when the phone rings. One of your friends calls to ask if you want to join him and some other friends. He wants to pick you up in a minute.

Students were asked to imagine that they had chosen the school-related activity (“Assume that you decide to stay at home and study for the test and do not meet your friends. What will happen?”). They then answered 14 items about several aspects of their study behavior for that hypothetical scenario. These items represented five different facets of conflict-related performance: distractibility (e.g., “While studying, I’ll be easily distracted”), depth of processing (e.g., “I’ll be soon completely absorbed in studying so that I won’t think about anything else”, reversed), persistence (e.g., “It’ll be very hard for me to keep on studying until the end”), switching (e.g., “I’ll start to study, but then switch to another activity quickly”), and mood (e.g., “I’ll get into a bad mood easily because I sit at the desk while the others have fun”). Students answered the items on four-point scales labeled *totally right* (3), *almost right* (2), *hardly right* (1) and *not at all right* (0). The items were highly correlated. Internal consistencies were high in all countries: .89 in Bosnia-Herzegovina, .86 in India, .84 in Paraguay, .89 in Spain, and .85 in the US (Cronbach’s  $\alpha$ ).

*Time investment.* Students were asked about the amount of time that they invest in school-related activities. They rated four questions regarding time invested in homework, preparation in general, and preparation time for the last mathematics and English test. One item was, „How much time do you spend on studying for school each day on average? (learning, homework, preparing etc.)?“ Students answered these items on a five-point rating-scale ranging from *less than half an hour* (0) to *more than three hours* (4). The internal consistencies were satisfactory for most samples: .70 for Bosnia-Herzegovina, .58 for India, .72 for Paraguay, .77 for Spain, and .47 for the US (Cronbach’s  $\alpha$ ). The low internal consistency of this variable in the US sample is caused by its reduced variance. Eighty percent of the students indicated they did not spend any time preparing for exams. This is consistent with other data showing that in US schools, homework is often done in school (e.g., Elliott, Hufton, Willis, & Illushin, 2005). We do not know why the consistency of the scale for Indian

students is as low as it is. Despite the low internal consistencies in these two cultural samples we decided to include the variable in the analyses for the purpose of comparability.

### *Overview on statistical testing*

Relations of value orientations on the one hand, and the dependent variables “conflict frequency”, “time investment”, “motivational interference”, and “economic capital” on the other were analyzed by means of a series of multiple regression analyses. For each dependent variable, three separate regression analyses were performed. In these analyses, the five-step categorical variable “country” was represented by four variables with weighted effects coding (cf. West, Aiken, & Krull, 1996). Weighted effects coding is a coding scheme designed for the case of groups unequal in size. When used in combination with interaction terms, weighted effects coding allows to test whether the regression slopes of specific groups deviate from the weighted (overall) regression slopes in the whole sample. Therefore, weighted effects coding is suited to address our hypothesis of homogenous relationships across countries.

In a first step, four effect-coded variables for “country” were entered into the regression equation (Model 1). Due to the coding scheme, the intercept term of the regression analysis represents the overall mean of the dependent variable. The regression coefficients of the effect-coded variables correspond to deviations of the means of individual countries from this mean. The statistics associated with these regression coefficients can be used to test these deviations for significance. The same kind of analysis was also performed with “modern” and “postmodern value orientation” and “economic capital” as dependent variables. In all analyses, age and gender were controlled for.

In the second step, both “modern” and “postmodern value orientation” were entered into the regression equations simultaneously (Model 2). This analysis was performed to test our first hypothesis that in the whole sample the two value orientations would be linked to the

frequency of motivational conflicts, experience of motivational interference, and time devoted to learning. Value orientations were centered at their respective means. Their interaction was included in the regression equation to allow for their joint effect (Fries et al., 2005; Hofer et al., 2008).

Finally, product terms of value orientations with each of the effect-coded variables were calculated and entered into the regression equation in order to test for interactions of “country” and “value orientation” (Model 3). This was done to determine whether the relationships between value orientations and the dependent variables can be generalized across countries (second hypothesis). Due to the effect-coding scheme, the regression coefficients of the product terms represent sample-specific deviations of the effects of value orientations from their weighted mean effects across all countries.<sup>1</sup> Since there were five countries represented by only four effect-coded variables, all regression analyses were performed twice for each dependent variable, with different samples used as reference category, to obtain coefficients for all five samples. A total of 30 interactions were tested for significance (2 value orientations  $\times$  3 dependent variables  $\times$  5 countries). Since significant interactions are contradictory to our hypotheses whenever they indicate the lack of a relationship or a reversed relationship in one of the countries, we did not correct the alpha level. This way, a more conservative test of our hypotheses was achieved.

## Results

### *Mean differences in the variables*

Table 1 shows the results of Model 1. Figure 1 depicts the means and standard errors of the variables per country. The first column contains the intercept terms of the regression analyses, corresponding to the weighted means of the respective dependent variable in the entire sample. The remaining columns contain country-specific deviations from these means for each country and respective test statistics. Students from relatively poor countries

(especially India) scored lower on our measure of economic capital than did students from the comparatively rich countries (Spain and the US). Students from India also were more modern, those from India and Paraguay were less postmodern in their values. Mean differences between countries accounted for 10.7%, 9.7%, and 44.7% of the variance of modern value orientation, postmodern value orientation, and economic capital, and 5.6%, 34.0%, and 16.7% of the variance of conflict frequency, time investment, and motivational interference. Clearly, students from the US had the highest scores in conflict frequency and motivational interference and the lowest in time invested for studying, while the results were nearly opposite for students from India. The means of the students from the other countries lay in between these scores. Hence, with the exception of Bosnia, most samples differed from each other in the expected directions.

Insert Table 1 and Figure 1 about here

#### *Relations between value orientations and the dependent variables*

Table 2 depicts the intercorrelations between the variables, including age and gender. Furthermore, economic capital, age, and gender were controlled for. Table 3 shows the weighted mean effects of value orientations on the dependent variables from Model 2. As can be seen from this table, the results mostly were as had been expected. Modern value orientation had a negative effect on the experience of motivational interference and a positive effect on time investment. The effects of postmodern value orientation were reversed and they also had a positive effect on conflict frequency. There were no interactions between value orientations, and no age effects. Female students invested significantly more time in learning than males.

Insert Tables 2 and 3 about here

*Cross-sample differences in the relations*

The regression weights reported in table 3 changed slightly by introducing product terms of value orientations with the variables for country in Model 3. In 7 out of 30 cases, significant interactions of value orientation with country were obtained. Furthermore, there were three at least marginally significant interactions. However, of these ten interaction effects, four effects were due to the hypothesized effects being even stronger for some of the countries than for the whole sample. Figures 2, 3 and 4 illustrate the interactions.

Insert Figures 2, 3, and 4 about here

As can be seen from Figure 2, in India, modern value orientation had a stronger negative effect on conflict frequency than in the whole sample (deviation from weighted mean effect:  $\Delta b = -0.23$ ,  $SE = 0.06$ ,  $t = -3.91$ ,  $p < .001$ ,  $f^2 = .00$ ), while in Spain the effect was weaker ( $\Delta b = 0.07$ ,  $SE = 0.03$ ; ,  $t = 1.91$ ,  $p = .056$ ,  $f^2 = .00$ ), and in the US it descriptively even was in the reverse direction ( $\Delta b = 0.11$ ,  $SE = 0.06$ ,  $t = 1.98$ ,  $p < .01$ ,  $f^2 = .00$ ). However, in Spain there also was a stronger positive effect of postmodern value orientation on conflict frequency than in the whole sample ( $\Delta b = 0.06$ ,  $SE = 0.03$ ,  $t = 2.21$ ,  $p < .05$ ,  $f^2 = .01$ ). In India, this effect was weaker ( $\Delta b = -0.08$ ,  $SE = 0.04$ ; ,  $t = -1.84$ ,  $p = .066$ ,  $f^2 = .00$ ).

The effect of modern as well as postmodern value orientations on motivational interference was quite uniform across countries (see Figure 3). Only in Spain a marginally significant interaction indicates a stronger effect of modern value orientation on motivational interference ( $\Delta b = -0.04$ ,  $SE = 0.02$ ,  $t = -1.78$ ,  $p < .078$ ,  $f^2 = .00$ ).

As Figure 4 shows, in Spain the effect of modern value orientation on time investment was stronger than in the whole sample ( $\Delta b = 0.13$ ,  $SE = 0.03$ ,  $t = 4.28$ ,  $p < .001$ ,  $f^2 = .05$ ), while in the US the effect was weaker ( $\Delta b = -0.13$ ,  $SE = 0.05$ ,  $t = -2.65$ ,  $p < .01$ ,  $f^2 = .05$ ). In

Paraguay the relationship between the variables in question even was descriptively negative ( $\Delta b = -0.34$ ,  $SE = 0.11$ ,  $t = -3.17$ ,  $p < .01$ ,  $f^2 = .05$ ). Finally, in India, postmodern value orientation had a weaker effect on time investment than in the other countries ( $\Delta b = 0.09$ ,  $SE = 0.04$ ,  $t = 2.39$ ,  $p < .05$ ,  $f^2 = .02$ ).

Four of the interaction effects were due to the hypothesized effects being weaker for some of the countries than for the whole sample, and two were due to relationships pointing in the opposite direction. For all of these interactions, simple slopes were calculated (cf. Aiken & West, 1991). This was done to test whether the hypothesized relationships still hold for the countries in question or whether they indicate the presence of an effect contrary to our expectations, respectively. None of the simple slopes were significant (all  $t$ -values  $\leq -1.47$ , all  $p$ -values  $\geq .14$ ). Thus, all six interaction effects indicate the absence of the hypothesized relationship in one of the countries.

In summary, the results show that 24 of the 30 relationships were in line with the expectations, thus showing a considerable degree of generalizability across the samples from different countries.

## Discussion

In the reported study, samples from five countries differed considerably in the means of the variables. At the same time, the relations between values and the dependent variables display a similar pattern across the samples, with only a few exceptions. Following, first the results concerning differences between the cultural samples and then the results regarding the hypotheses are discussed. Finally, theoretical and practical implications and further limitations are considered.

*Sample differences*

We tried to include samples with a broad variation in the variables in order to perform a conservative test of the hypothesis that the associations between the variables are consistent across the samples. In fact, we uncovered marked differences in students' value orientations, experience of motivational interference during learning in the context of school-leisure conflicts, and time investment in studying across the countries. Postmodern value orientations were more pronounced for Western students, whereas they were lower for students from the low-income countries India and Paraguay. Students from rich countries displayed modern value orientations to a lower degree than those from relatively poor countries; students from the US and India were at the extremes. An exception from this pattern shows the Bosnian sample. Though stemming from a country with a rather low income, these students reported low modern value orientations, higher postmodern value orientations than expected, frequent school-leisure conflicts, and high motivational interference. The pattern is similar to that of US students, although in terms of wealth Bosnia is closer to the sample of Paraguay. This result can be explained by the fact that people in ex-communist societies have a stronger tendency to identify with postmodern western values. For instance, younger birth-cohorts in Western ex-communist societies showed high levels of self-expression values (Inglehart & Welzel, 2005). The relatively low level of Bosnian modern value orientation, too, can be explained within this framework. On the other hand, it is hard to explain why students from the Spanish sample showed lower conflict frequencies and motivational interference than their high postmodern value orientation would lead to expect.

Alternative factors can account for the results, given that people from different cultures think differently about education, learning, and leisure. With regard to the educational system in the countries included in this study, the frequency of motivational conflicts may depend on selection variables as well as on more proximal variables, such as the length of the school day

and the place where schoolwork is usually done. Even if the differences between the samples can be explained by various causes, the main result is that we were successful in including samples of students who differed with regards to the means in the variable means.

*The role of value orientations in school-leisure conflict*

In accordance with our first hypothesis, the data show relations between value orientations and frequency of school-leisure conflict, experience of motivational interference, and study time in the whole sample. Our results thus confirm results derived from the study of a German sample; the only difference being that in the former study, the variable decision within a school-leisure conflict was included instead of the variable conflict frequency and structural equation modeling was used to test the relationships between the variables in the multivariate context (Hofer et al., 2007). The results are consistent with the notion that value orientations determine the experience of motivational interference after a school-leisure conflict. Values allow people to decide what to prefer and what to avoid (Schwartz, 1992). The mechanism of this influence can be analyzed in more detail following Feather's (1995) argument that values have an impact on behavior via their influence on the valences that underlie the behavioral decisions. Values are believed to have an effect on the valences of concrete actions, objects, and situations. Valences then determine the options to which an individual is attracted or from which an individual is deflected. If a student has to decide between studying and going out with friends, values constituting the modern value orientation (for instance, "Grades are important") and values constituting the postmodern value orientation (for instance "Staying with friends is fun") may be activated and may influence the individual's evaluation of the conflicting alternatives. In accordance with this argument, Fries et al. (2007) investigated the relation between modern and postmodern value orientation, the valences of two school subjects (Mathematics and German), and school grades. A

mediation analysis indicated that the significant relation between value orientation and school grades was mediated completely by the valences of the different school subjects.

### *Similarities across the samples*

With regard to the second hypothesis, the relations between value orientations and the other variables included in the study hold – by and large – for the countries considered. The analyses demonstrated that value orientations are systematically related to the experience of motivational interference in all samples. In each country, students with a high postmodern value orientation reported higher motivational interference during studying, whereas students with a high modern value orientation reported experiencing motivational interference to a lesser degree. The results also showed that value orientations predict invested study time across the different samples. As pointed out in the results section, there were some deviations in the regression coefficients between the samples from the different countries, indicated in significant interactions. We refrain from discussing them because they can hardly be generalized.

On the whole, even if there were large cross-sample differences in the variables included, there is little evidence suggesting that the relationships between value orientations and motivational interference in studying are substantially different for students from countries that differ in learning-relevant life circumstances, such as value orientations, economic features, and education system. It seems that, whenever and wherever students face motivational school-leisure conflicts, they have the tendency to experience impaired studying, dependent on the strength of their value orientations. This result complements the outcomes of a comparative study on motivational interference during leisure that included samples from Germany, Italy, Croatia, Mexico, and India with motivational interference during leisure as the central variable. Also these samples varied substantially in value orientations, motivational interference during leisure time (experience of distraction and bad mood), and

time invested in studying. This study also revealed consistencies in the associations between the variables across the samples, which indicates that most of the assumed relations can be generalized (Hofer et al., 2008). Hence, the impairment of the regulation of a current activity due to knowledge about attractive options is valid whether the current activity is studying or leisure and also in culturally differing contexts. The results are consistent with a growing body of research on learning motivation (Zusho, Pintrich, & Cortina, 2004), well-being (Ryan et al., 1999), and family relationships (Dmitrieva, Chen, Greenberger, & Gil-Rivas, 2005) that shows that the variables were interrelated in a similar way in different countries, despite mean differences of the variables between the samples. Further studies are needed including countries with a Confucian background in which learning is experienced as more inherently joyful than in Western countries (Stevenson & Lee, 1990).

#### *Further limitations*

The study had limitations in addition to the one mentioned above. First, our sampling was opportunistic in including mainly students from private schools run by Franciscans.

Independent private schools in the countries included in the PISA study outperformed public schools in terms of competencies, for instance, in Spain and the US (PISA, 2005). Private education, however, may have a different meaning in different education systems. Catholic schools are a subset of private schools and private schools receive state subsidies in varying amounts. In our case, not enough data about Catholic private schools in the countries investigated are available to resolve this issue. Hence, we must be cautious about making generalizations with regard to mean differences as well as to relationships.

Limitations of the study refer also to questions of measurement. The variables used in our study are based on self-reports, for which the validity regarding real life behavior is unclear. More specifically, the validity of operationalizing value orientations as judgments about situation-specific prototypes might be questionable. The correlations with dependent variables

might be to a certain amount due to the similarity of the prototype and the measured behavior. In order to optimize this approach for future studies, value orientations and conflict frequency should be measured by using more than just one item. As a further point, the low amount of time that students in the US sample invested in school-related activities may indicate that, despite reporting high incidence of school-leisure conflicts, these students did judge the presented scenario only on a hypothetical basis. The measurement of the experience of motivational interference by hypothetical scenarios can also be criticized, claiming that the effects shown might be limited to fictitious situations. However, there is also experimental data showing that dismissed alternatives can produce motivational interference (Fries & Dietz, 2007). Finally, in our study, the coefficients should not be interpreted as indicating a causal relationship. It is possible that value orientations are not predictors, but rather consequences, of motivational interference. Longitudinal data will allow for the analysis of relations between changing values and changes in learning behavior.

### *Theoretical Implications*

We can speculate that the increased emphasis on individual autonomy in post-modernity heightens students' opportunities for action, increases their striving for well-being, and broadens their perceived entitlement to act according to their choices (Inglehart & Welzel, 2005). The idea of broader choice in Western countries is also a topic in studies on regret. Persons who have an abundance of options may feel regret after making their choices (Iyengar & Lepper, 2000; see also Schwartz, 2000). This regret may contribute to the experience of motivational interference.

The concept underlying the study reported is that motivational incentives stemming from options that have not been chosen affect the performance of the chosen option. Current approaches to learning motivation largely neglect the influence of goals other than the one chosen. In the prominent model of Wigfield and Eccles (2000) on expectancy–value

motivation, the cost component is included theoretically, but to our knowledge, empirical studies are lacking. According to the work of Gollwitzer (Gollwitzer, Fujita, & Oettingen, 2004), which deals with the implementation of intentions, the act of planning an intended behavior activates a mental state that supports the implementation of the behavior. The implementation mindset facilitates goal attainment by preventing the weakening of commitment with regard to the chosen goal, so that subjects are able to tune out information that is not relevant for it. Our approach, however, shows that learning regulation can be impaired by incentives stemming from alternative options, thus taking up the notion from Atkinson and Birch (1974) that even if only one activity is performed at any given time, motivations for alternative actions might come into play. If the motivation for an alternative action is rising, a switch takes place when this motivation exceeds the motivation for the current action. In our theoretical framework, the motivation for the missed option weakens the performance of the current action. Even in the case of leisure activities, the waiting intention of a duty might impair the realization of the current action (Fries et al., 2005; Hofer et al., 2008). Conditions under which attractive options interfere with the performance of current actions have been investigated experimentally. For instance, the amount of motivational interference depends on the attraction of the alternative and also on the interestingness of the current activity (Dietz, 2006; Heise, Gerjets, & Westermann, 1997).

### *Practical Implications*

Practical implications of the study will be addressed in brief. Literature on self-regulation of learning has grown enormously during the last twenty years. It is possible that this is a reaction to a problem typical for Western affluent countries. A heightened concern has been articulated that many adolescents possess maladaptive motivational profiles and poor self-discipline (e.g., Zimmerman, 2002; Duckworth & Seligman, 2005). Particularly when they make the transition to secondary school, many students lose interest in school matters.

Extending the interpretation of a decreasing fit between school environment and students' needs (Eccles, 2004) we argue that as students get older, the need for activities outside school increases. For instance, besides studying for school adolescents also have to think about their future roles, to establish new relations with their parents and friends, to deal with bodily changes, and to develop their interests.

On the other hand, leisure options are a burden only under certain conditions. Spending a certain amount of time on leisure activities does not interfere with optimal learning (Lens et al., 2005). One can speculate about personality variables that may be helpful in avoiding school-leisure conflicts. Research on future time perspective highlights its central role for the study of motivation (Husman & Lens, 1999). Results show that students giving higher valences to goals in the distant future and perceiving studying hard as more instrumental for reaching goals in the distant future had significantly higher grades and higher study persistence (Lens, Simons, & Dewitte, 2002). Self-control as a trait seems to be a key issue in inhibiting competing alternatives to a focal goal. It allows for the efficient pursuit of the principal task and prevents the sacrifice of a high-priority goal by succumbing to temptation. Recent studies pointed to a substantial relationship between grades and various measures of self-control (Tangney, Baumeister, & Boone, 2004) and conscientiousness, even if cognitive abilities are controlled for (Bratko, Chamorro-Premuzic, & Saks, 2006). Finally, the conception of state- versus action-orientation from Personality Systems Interaction theory (Kuhl, 2001) could be relevant for the phenomenon of controlling academic and leisure behavior. State orientation is characterized by the inability to self-generate positive affect that is needed to act upon one's decisions while action orientation describes self-motivation and initiative. Action-oriented persons easily disengage from unwanted thoughts and goals while state-oriented individuals are higher in procrastination, boredom, and frustration (Blunt & Pychyl, 2005).

An external factor regarding the avoidance of school-leisure conflict is the amount of structure in the students' course of the day. Research on habits in everyday life (Wood, Quinn, & Kashy, 2002) investigated behavior that had been performed almost daily in stable contexts. In these cases, subjects had self-regulatory benefits in that they experienced less feelings of stress. Habitual behavior has to be less guided by thoughts while thoughts are necessary in order to guide non-habitual behavior. It should be a good advice for students to structure their free-time in a way that necessary activities and leisure activities are regularly done at certain times and places. Last but not least, the bulk of research on participation in organized extracurricular activities has even shown positive consequences of participation for academic, educational, social, civic, and physical development (see Feldman & Matjasko, 2005), compared to unstructured out-of-school activities. Thus, motivational interference that stems from school-leisure conflict is not a ubiquitous phenomenon, but probably depends on certain conditions. Personal and environmental variables may also interact. In an experiment on resistance to temptation, state-oriented persons performed better with externally controlled instructions. It seems that external sources of regulation can compensate for self-regulatory deficits (Baumann & Kuhl, 2005).

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## Appendix

### Descriptions of students representing value prototypes

(Modern) For **JOHN** it is mainly important to achieve something in life. He has clear goals he consequently tries to reach. He struggles even through uncomfortable tasks, if his goal is important to him. Then he puts back other activities. John wants to find a good job in the future in which he earns much money and can afford everything he would like to have.

(Postmodern) For **SIMON** it is above all important to have fun in life and to experience a lot. His favorite way of spending his time is with his friends. They are very important to him. He loves diversion and spontaneous actions. Therefore he avoids committing himself to something or to plan for a longer period of time. If it were according to him life would only consist of free time.

*Table and figure captions*

Table 1

*Deviations of the variables from the weighted mean per country.*

*Note.*  $\Delta M$ : deviation from the weighted mean, with age and gender controlled for.  $R^2$ : modern value orientation: .10; postmodern value orientation: .10; economic capital: .45; conflict frequency: .05; time investment: .30; motivational interference: .16.

\* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$ .

Table 2

*Intercorrelations between the variables.*

*Note.* \* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$ .

Table 3

*Relations between value orientations and the dependent variables.*

*Note.* <sup>a</sup> Unstandardized mean weighted regression coefficient.

\* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$ .

Figure 1. Means and standard errors of the variables per country

Figure 2. Country  $\times$  value orientation interactions in the regression analysis with conflict frequency as criterion. Test statistics refer to significant deviations of country specific effects from the weighted mean effect across all countries (dotted slope).

\* $p < .05$ , \*\* $p < .01$ . \*\*\* $p < .001$ .

Figure 3. Country  $\times$  value orientation interactions in the regression analysis with motivational interference as criterion. Test statistics refer to significant deviations of country specific effects from the weighted mean effect across all countries (dotted slope).

\* $p < .05$ , \*\* $p < .01$ . \*\*\* $p < .001$ .

Figure 4. Country  $\times$  value orientation interactions in the regression analysis with time investment as criterion. Test statistics refer to significant deviations of country specific effects from the weighted mean effect across all countries (dotted slope).

\* $p < .05$ , \*\* $p < .01$ . \*\*\* $p < .001$ .

Table 1

*Deviations of the variables from the weighted mean per country.*

	Total		Bosnia			India			Paraguay			Spain			USA			Age			Gender		
	M	SE	M	SE	t	M	SE	t	M	SE	t	M	SE	t	M	SE	t	M	SE	t	M	SE	t
Modern values	.89	.18	.19	.06	-3.01**	.59	.07	9.06***	.21	.11	1.89	.08	.04	-2.03*	.49	.08	-6.04***	.02	.01	-2.11*	.13	.06	-2.01*
Postmodern values	.46	.23	.05	.08	-.57	.52	.08	-6.35***	.77	.14	-5.44***	.24	.05	5.10***	.61	.10	5.98***	.02	.01	1.26	.05	.08	.65
Conflict frequency	.80	.14	.17	.05	3.32***	.34	.05	-6.67***	.03	.09	-.37	.00	.03	.06	.28	.07	4.27***	.00	.01	-.43	.02	.05	.30
Motivational interference	.24	.11	.23	.04	5.90***	.38	.04	-9.76***	.26	.07	-3.84***	.01	.02	-.52	.45	.05	9.21***	.01	.01	1.71	.05	.04	1.23
Time investment	.71	.13	.47	.05	-10.15***	.63	.05	13.35***	.58	.08	7.12***	.07	.03	2.67**	.88	.06	-14.96***	.01	.01	-1.01	.33	.05	-7.25***
Economic capital	.34	.07	.19	.02	-8.34***	.48	.02	-20.48***	.24	.04	-5.95***	.21	.01	15.75***	.49	.03	16.55***	.01	.00	1.82	.03	.02	1.27

*Note.*  $\Delta M$ : Deviation from the overall mean, with age and gender controlled for.  $R^2$ : modern value orientation: .10; postmodern value orientation: .10; economic capital: .45.; conflict frequency: .05; time investment: .30; motivational interference: .16.

\* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$ .

Table 2

*Intercorrelations between variables*

	1	2	3	4	5	6	7	8
1. Modern values	—							
2. Postmodern values	-.34**	—						
3. Conflict frequency	-.16**	.18**	—					
4. Motivational interference	-.42**	.44**	.28**	—				
5. Time investment	.38**	-.29**	-.12**	-.50**	—			
6. Economic capital	-.16**	.19**	.12**	.19**	-.25**	—		
7. Age	.01	-.09**	.02	-.04	-.06	-.14	—	
8. Gender	-.03	.02	-.01	.01	-.17**	-.01	-.02	—

\* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$

Table 3

*Relations between value orientations and dependent variables.*

Criterion	Predictor (value orientation)	$\underline{b}^a$	SE	$t$	$R^2$	$R^2$ Total
Conflict frequency	Modern	-.05	0.03	-1.88	.00	
	Postmodern	.08	0.02	3.80***	.01	
	Postmodern × Modern	.01	0.02	.38	.00	
	Economic capital	.10	.07	1.47	.00	
	Age	-.01	0.01	-.72	.00	
	Gender	0.00	0.05	.08	.00	
Mot. interference	Modern	-.15	.02	-8.69***	.05	
	Postmodern	.15	.01	11.11***	.08	
	Postmodern × Modern	-.01	.01	-.73	.00	
	Economic capital	.01	.05	.20	.00	
	Age	.01	.01	.86	.00	
	Gender	.02	.03	.65	.00	
Time investment	Modern	.17	.02	7.49***	.03	
	Postmodern	-.08	.02	-4.53***	.01	
	Postmodern × Modern	.01	.01	.36	.00	
	Economic capital	-.07	.06	-1.21	.00	
	Age	-.00	.01	-.34	.00	
	Gender	-.31	.04	-7.05***	.03	

Note. <sup>a</sup>Unstandardized mean weighted regression coefficients.

\* $p < .05$ , \*\* $p < .01$ . \*\*\* $p < .001$ .

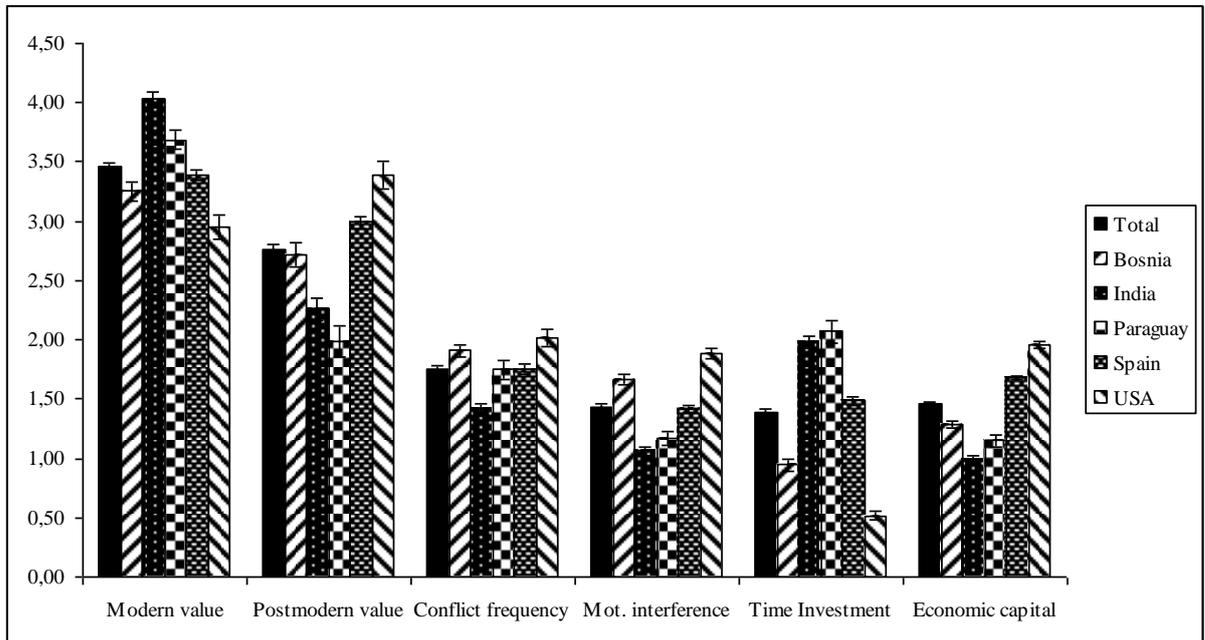


Figure 1. Means and standard errors of the variables per country.

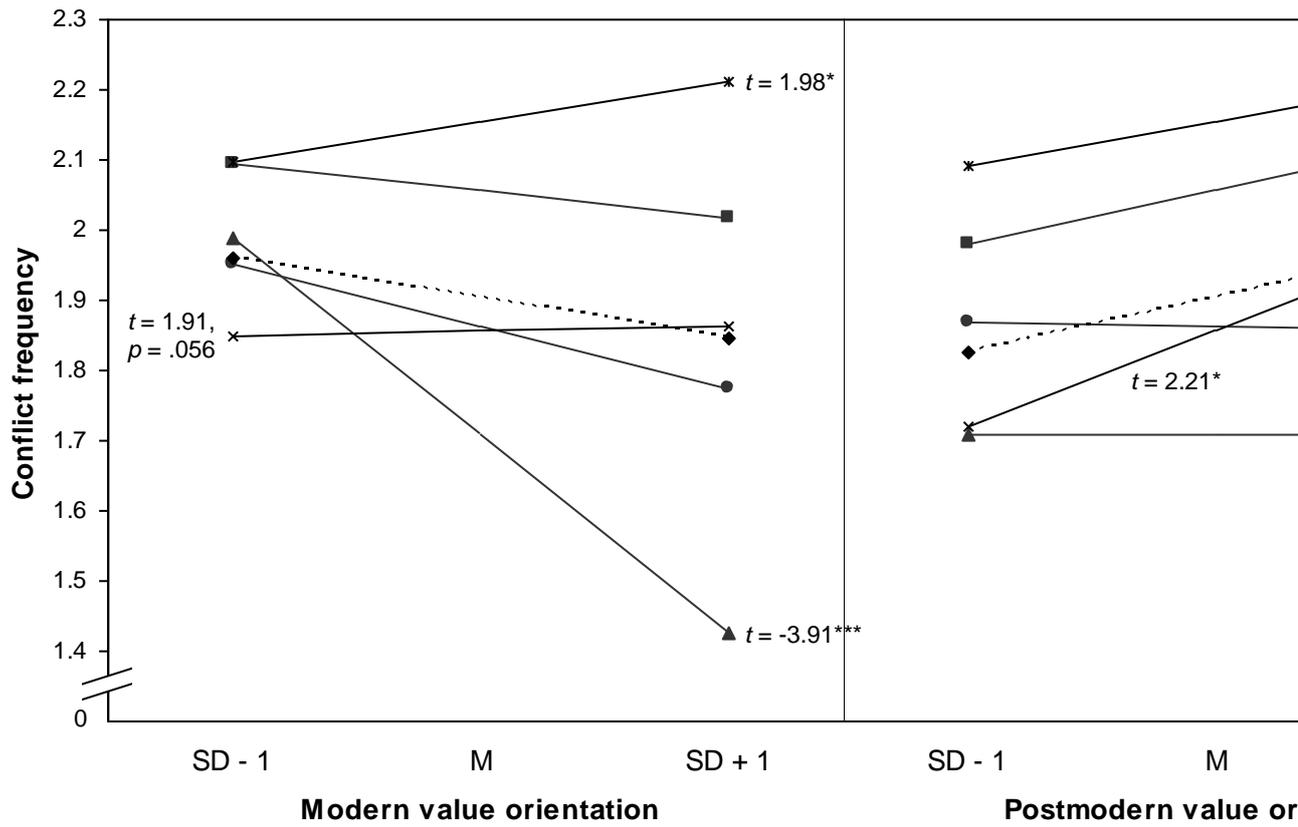


Figure 2. Country  $\times$  value orientation interactions in the regression analysis with conflict frequency as criterion. Test statistics refer to significant deviations of country specific effects from the weighted mean effect across all countries (dotted slope).

\* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$ .

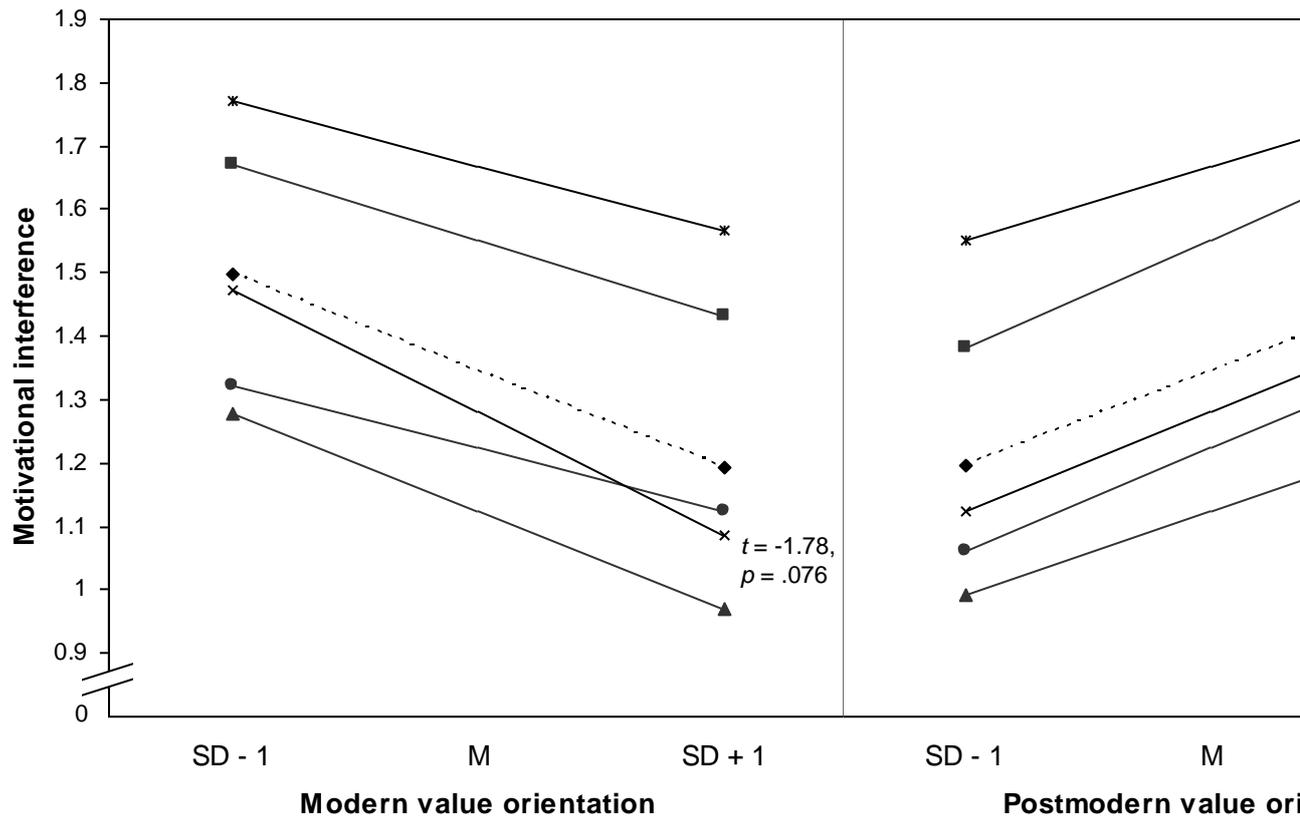


Figure 3. Country  $\times$  value orientation interactions in the regression analysis with motivational interference as criterion. Test statistics refer to significant deviations of country specific effects from the weighted mean effect across all countries (dotted slope).

\* $p < .05$ , \*\* $p < .01$ . \*\*\* $p < .001$ .

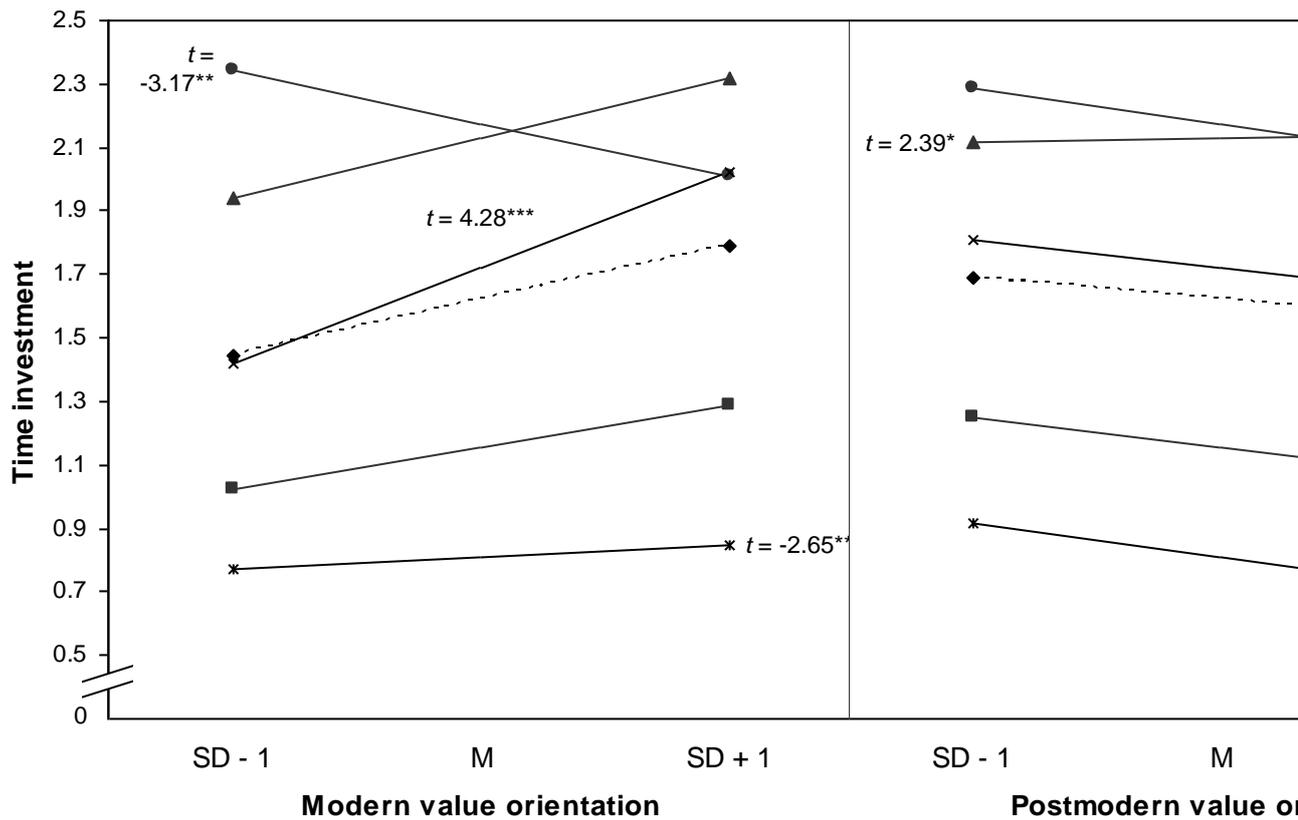


Figure 4. Country  $\times$  value orientation interactions in the regression analysis with time investment as criterion. Test statistics refer to significant deviations of country specific effects from the weighted mean effect across all countries (dotted slope).

\* $p < .05$ , \*\* $p < .01$ . \*\*\* $p < .001$ .

<sup>1</sup> The connections between the values of these conceptions are not yet empirically established. While some authors found high correlations between the concepts (Hofstede & Hofstede, 2005; Inglehart & Welzel, 2005), they were largely unrelated in other studies (Mohler, Rammstedt, & Wohn, 2006).

<sup>2</sup> To keep things simple, we did not include higher order interaction terms in the regression analyses. Therefore, the slopes obtained for specific countries do not exactly match regression slopes from analyses performed for each of the countries separately. However, the differences can be neglected.