

Rapid Adaptation to Social Change in Central Europe: Changes in Locus of Control, Attribution, Subjective Well-Being, Self-Direction, and Trust

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Rapid Adaptation to Social Change in Central Europe: Changes in Locus of Control, Attribution, Subjective Well-Being, Self-Direction, and Trust. This paper reviews research examining the impact of political and economic transition in post-communist Central European countries on social psychological processes. While other aspects of democratization in Central Europe have been well documented, only recently have social psychologists turned their attention to this event. Since the collapse of communism, Central Europeans have a more internal sense of control and make more dispositional attributions for others' behaviour. After initial declines in subjective well-being during the first decade of the post-communist period, Central Europeans now have higher levels of well-being than they did at the beginning of the post-communist period. Central Europeans have also become more self-directed and have higher levels of general trust since the end of communism. Taken together these findings suggest that Central Europeans are unique in how quickly and successfully they have adapted to the rapid and massive institutional, political, economic, and social changes that accompanied democratization.

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Culture has become a major area of interest in social psychology. Social psychologists have investigated the impact of culture on individualism/collectivism (Triandis, 1994) Markus – Kitayama 1991; Nisbett et al. 2001; Nisbett 2003; Kitayama – Duffy – Uchida 2007; Oysermann – Lee 2007), attribution (Miller 1984; Choi – Nisbett – Norenzayan, 1999; Kitayama et al. 2006), field dependence (Kuhnen et al. 2001; Kitayama et al. 2002), visual attention (Nisbett – Miyamoto 2005; Masuda – Nisbett 2006, Miyamoto – Nisbett – Masuda 2006), categorization (Norenzayan – Smith – Jun 2002; Ji – Zhang – Nisbett 2004) cognitive dissonance (Kitayama – Snibbe – Markus 2004; Hoshino-Browne – Zanna – Spencer 2005), reasoning (Peng – Nisbett 1999), social identity (Brewer – Yuki 2007), subjective well-being (Diener – Diener – Diener 1995) and emotion (Markus – Kitayama 1994; Kitayama et al. 2006b; Kitayama – Park 2007). The majority of this research has focused on differences between Westerners (primarily North Americans) and East Asians, however some research has also

found parallel differences between Westerners and Central and East Europeans (Kuhnen – Hannover – Roeder 2001; Varnum et al. 2008a).

While the impact of culture has been demonstrated in a variety of psychological domains, most of this research has proceeded under the assumption that contemporary patterns of cultural differences are temporally stable. Only recently have social psychologists begun to explore how cultural change may affect the domains in which cross-cultural differences have been documented. For example, Kitayama and colleagues (Kitayama et al. 2006; Kitayama et al. 2007) have begun to explore the origin of American individualism and related aspects of cognition, hypothesizing that the origins of this pattern may lie in the settling of frontiers and voluntary settlement. Another avenue of inquiry has been to look at societies in which rapid and massive social and institutional change has occurred, specifically post-communist Central European societies. These societies offer a unique opportunity to study cultural change from a social psychological perspective because of: 1) the fact that the changes which occurred are likely to affected several domains of interest, 2) the dramatic and pervasive nature of the change (the shift from communism to democratic, market-based societies), and 3) the recency and rapidity of the change (it is possible to study both those who spent most of their lives in the old system and those who were socialized after communism collapsed).

By Central Europe, I refer to post-communist countries which were previously part of the Habsburg Empire (including Croatia, Czech Republic, Hungary, Poland, Slovakia, Slovenia, and Ukraine). In the literature reviewed below, when data from international surveys are analyzed at the level of regions Central Europe is often represented by several, but not all, of the countries which comprise the region due to the fact that complete data is lacking for all countries in most of the analyses.

Locus of Control and Attribution

Locus of control refers to a person's sense that her life is determined primarily by factors outside of her control (an external locus of control) or by factors over which they have control (an internal locus of control). By attribution I mean the tendency to explain the behaviour of others in situational terms (such as context and social pressures) or dispositional terms (such as personality traits and characteristics). Life during the communist period in Central Europe seems likely to have made the impact of external factors on one's own behaviour and that of others more salient. During the communist period there were restrictions on freedom of speech and extensive surveillance by secret police. This necessitated speaking in code when talking about politically sensitive topics, and seems likely to have made it apparent that people's outward expressions did not necessarily

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match their inward beliefs. The party also controlled many aspects of life, such as employment, housing, and healthcare. The party was able to exert control not only through censorship and quashing dissent, but also through its monopoly on the distribution of resources. This state of affairs also seems likely to have made the role of external factors in determining one's life highly salient. Additionally, the communist party maintained a monopoly on power and was not much subject to influence by the citizens of the societies it governed.

After the collapse of communism, restrictions on speech and geographic mobility were lifted. The state also abandoned its monopoly on economic life, reducing the importance of party membership or political expression in securing employment. The shift to market economies brought with it increased incentives for individual initiative and self-reliance, which seems likely to have decreased the salience of contextual factors. Increased geographic mobility also seems likely to foster an increase in a sense that one has control over one's life. Democratization also brought with it an increased sense of individual political efficacy due to events like the Velvet Revolution and the Orange Revolution and through the ouster of autocratic leaders like Mečiar through elections. While external pressures still exert influence on behaviour, these pressures are likely to be less salient in the post-communist period than in the past. Thus it seems likely that Central Europeans today would have a less external locus of control and show less situational attribution for the behaviour of others than they did during the communist period.

Thus there is reason to believe that Central Europeans had a more external locus of control and more situational attribution tendencies in the communist period than during the post-communist period. If this is indeed the case then we would expect 1) that older adults in Central Europeans would have a more external locus of control and make more situational attributions than younger adults, and 2) that as time passed since the communist period Central Europeans would show increasing internal control and more dispositional patterns of attribution.

Locus of Control

Several studies have provided evidence of a shift toward more internal locus of control in Central Europe in the post-communist period. Polish students in 1986 reported a more external locus of control than Polish students in 1991 (Tobacyk – 1992). Surveys in Ukraine (Panina 2005) have also indicated that internal control has increased from 1994-2005. Macek et al. (1998) found that in the mid 1990's younger adolescents in Czech Republic and Hungary showed greater belief in the efficacy of individual initiative than did older adolescents, suggesting a more internal sense of control. While these studies fit with the predictions of what one

would expect to observe if these changes are indeed due to democratization, they are limited by small or single country samples and by a lack of appropriate comparison groups.

A more recent study comparing World Values Survey data from North Americans, West Europeans, and Central Europeans not only found that younger Central Europeans had a more internal locus of control than older Central Europeans, but found that this pattern was far stronger in Central Europe than in North America or Western Europe, thus age-based differences in Central Europe could not be due to aging itself (Varnum – Bowman 2007 study 3; see table 1 for a summary of unpublished data). Furthermore, Varnum – Bowman (2007 study 3) found that the over time internal control increased most in Central Europe, increased slightly in North America, and did not change in Western Europe, ruling out the interpretation that these changes were due to globalization (see figures 1 and 2). While the previously mentioned research provides strong support for the interpretation that the change in political/economic system in Central Europe caused an increase in internal locus of control, they are not able to directly assess the role of communism or post-communism as causal variables. However, a recent study in which participants the salience of the communist period and the post-communist period were manipulated does support this interpretation. Varnum – Bowman (2007 study 4) found that Slovaks primed with images of the communist period showed a more external locus of control than those primed with the post-communist period, suggesting that the different political systems may have played a causal role in changes in locus of control (see figure 3 for priming stimuli).

Attribution

The transition from communism to democratic, market-based societies also seems to have caused changes in how Central Europeans explain social behaviour. A recent large-scale study found that when asked to read several vignettes describing either positive or negative behaviour and asked to indicate the extent to which the actors' behaviours were caused by situational factors and dispositional factors found that older Slovaks believed that situational factors had more influence on behaviour than did younger Slovaks (Varnum – Bowman 2007 study 1; see table 1 for a summary of unpublished data). This pattern was also found in secondary analyses of the Pew Global Attitudes Project, with younger Central Europeans giving more dispositional explanations for others' failures than older Central Europeans, while the pattern was reversed in North America and Western Europe (Varnum – Bowman 2007 study 2; see figure 4). This study indicates that as with locus of control age-based differences in attribution in Central Europe are

unlikely to be caused by aging, but rather are more likely to reflect the impact of communism and transition.

The aging interpretation is also not supported by research examining older and younger adults in the US and China (Blanchard-Fields et al. 2007), which found that older adults in the US displayed more correspondence bias (indicating more dispositional attribution tendencies) than younger Americans, but that there were no age-based differences in China. Further supporting the interpretation that differences in attribution among younger and older Central Europeans were caused by the change in system is the fact that Slovaks primed with communist images showed more situational attribution tendencies than those primed with images of the post-communist period (Varnum – Bowman, 2007 study 4).

Subjective Well-Being

Age and Well-Being in changing societies

The collapse of communism meant not only a change in political and economic institutions, but also led to changes in values in Central Europe. Older people in these societies had not only grown up during a period where collectivist values were more important, but also had learned to adapt and survive the realities of life in a communist state (through close relationships in the informal economy and close ties to family). In a relatively short period of time these values and adaptations became out of step with the new realities of the life in democratic capitalist societies. These changes seem likely to lead to lower subjective well-being among older adults in Central Europe relative to younger adults. The greater degree of unpredictability and uncertainty that accompanied the post-communist period also seems to be a likely cause of dissatisfaction among older Central Europeans, in contrast to younger Central Europeans who were socialized during a period of great uncertainty and seem more likely to be comfortable with the realities of a market based economy and a democratic political system. While there are many other likely causes of discontent among older adults in Central Europe (decreases in the adequacy of pensions to provide for economic needs, declines in health, etc), it also seems likely that low levels of subjective well-being would to some extent reflect difference in the ability of older and younger Central Europeans to adjust to changes in values and social life.

Relatively little research has examined subjective well-being with regard to age in Central Europe. In a recent large scale survey nationally representative survey, older Slovaks indicated lower levels of satisfaction with their lives than younger Slovaks (Bowman – Varnum – Nisbett 2008). Furthermore, while the same pattern was observed among Slovaks in data from the World Values Survey, the opposite pattern was found among Americans (such that age was associated with greater life satisfaction in the US) (Bowman et al., 2008; see figure 5).

Additionally, while older Slovaks indicate they are less happy than younger Slovaks, the reverse is true among Americans (Bowman et al. 2008; see figure 6). Interestingly these effects persist even when controlling for locus of control (Bowman et al., 2008).

While overall Central Europeans reported lower levels of subjective well-being than Americans in the studies reported by Bowman et al (2008) - in line with other studies showing lower levels of subjective well-being in Central Europe relative to Western Europe and the US - (Diener – Diener – Diener 1995; Grob, et al., 1996; Diener & Suh – 1999), the effect of age in Central Europe suggests that democratization may eventually lead to levels of subjective well-being in Central Europe comparable to those in Western Europe.

Democratization increases SWB

Research that has examined more recent data points from Central Europe suggests that on the whole SWB has in fact increased since the communist period. Previous examinations of the impact of democratization on subjective well-being have suggested that overall subjective well-being has declined in post-communist societies since the end of the communist period. Generally speaking, Bowman et al., (2008) found that levels of subjective well-being decreased slightly for younger adults but decreased massively for older adults in Slovakia. In line with Bowman et al., (2008), in a recent analysis of data collected in large scale nationally representative surveys by Bútorová – Hartl – Wolchik (2004), Varnum – Bowman – Nisbett – Wolchik (2008b), found large age differences in life satisfaction in Slovakia and the Czech Republic, such that younger adults in both societies reported higher levels of life satisfaction than older adults and that these age differences increased over time. However while the age effects observed by Bowman et al., (2008), seem to be driven by differences in the amount of decline in SWB for different age cohorts over time, Bútorová et al's (2004) data show a fairly substantial *increase* in SWB among young adults from 1994-2004 in Slovakia and the Czech Republic, while levels of SWB remained fairly stable for older adults in these societies (see figure 7). The difference between these two sets of findings reflects the fact that the most recent data points available from the World Values Survey for Central Europe come from the late 1990's. Given the continued reforms, democratization, and economic growth which occurred since the late 1990's it is not surprising that comparisons of data from the mid 1990's with the mid 2000's shows an actual increase in SWB. Taken together, these studies indicate that younger adults have had an easier time adjusting to the transition than older adults, but that eventually even older adults have shown some adaptation to these social changes.

Recent data have also provided evidence of the beneficial effect of democratization on well-being over the long term. It should be noted that while levels of well-being declined markedly in many countries in the early years of the post-communist period. The transition has not been a smooth process (either economically or politically), however by the mid-late 2000's most countries in the region had reached high levels of GDP and have become both highly democratic and fairly stable.

A pattern of overall increase in well-being, as assessed in various surveys and by different items, is apparent for most Central European countries where data is available from the end of the communist period to the present day on the World Database of Happiness (WDH) (2006). Unfortunately the WDH does not provide sample sizes making it impossible to run inferential analyses of their data. However, there are other sources of data on well-being in Central Europe which suggest that the transition in Central Europe has been accompanied by increased levels of well-being. For example, Inglehart (2006) found that levels of happiness in Slovenia as measured by the World Values Survey in 2006 were higher than in 1990. Inglehart (in press) also reports that after dips in the first decade after communism, happiness levels in Poland are higher than in 1990. Furthermore, when Varnum et al. (2008b), compared levels of well being in Slovakia from their 2007 data with Bútorová et al.'s (2004) data from 1994 and 2004 they found evidence of a dramatic overall increase in life satisfaction in Slovakia (see figure 8; for a summary of unpublished data see table 2). A secondary analysis of data from the European Social Survey (ESS) (2007), (a large scale nationally representative multi-wave survey) by Varnum and colleagues (2008b), adds further support to this interpretation, with significant increases in levels of life satisfaction and happiness in Poland and Slovenia from wave 1 (2002/3) to wave 3 (2006/7) (s, and significant increases in Slovakia from wave 2 (2004/5) to wave 3(2006/7) (data from Slovakia were not collected in wave 1; see table 2).

Further support for this interpretation comes from the Happy Planet Index (Marks – Abdallah – Simms – Thompson 2006), the authors of which found significant correlations between democracy (as assessed by Freedom House ratings or the World Bank's Voice and Accountability Index) and levels of life satisfaction in post-communist countries. Most of the Central European countries Slovenia, Slovakia, Czech Republic, Hungary fell at the high end of the spectrum in terms of both levels of democracy and levels of life satisfaction. This relationship held even when GDP was statistically controlled for, suggesting that democratic institutions themselves have a beneficial effect on well-being independent of the economic prosperity that tends to be associated with them (Marks et al. 2006).

Not only do democratic institutions lead to greater well-being, but apparently so to does the perception that one's society is democratic. Varnum et al. (2008b), using the Bútorová et al. (2004) dataset created an index of perceived democracy (PDI) based on items that related to aspects of democracy such as political efficacy, perceived rule of law, and perceived freedom of speech. PDI was a significant predictor of life satisfaction in the Czech Republic and Slovakia in 1994 and 2004 (see figure 11). PDI remained a significant predictor of life satisfaction even when self-rated material well being was statistically controlled for (see table 3). While PDI did not increase from 1994 to 2004, it did become an even stronger predictor of SWB, suggesting that democratic values and norms have become increasingly important to Central Europeans and are an increasingly important component of well-being. Thus while economic growth and increases in standard of living have led to increased well-being, democratic institutions and perceptions of democratization have also been responsible for this increase.

Other Areas of Change

Clearly post-communist societies provide an interesting area for studying the psychological impact of cultural change. Such research is only now beginning to take place and there are a variety of areas that have yet to be investigated or to be investigated in much depth. For example, preliminary research indicates that democratization in Central Europe has led to increases in general levels of trust (Varnum – Wolchik 2007; see figure 9). An increase in individualism in Central Europe since the communist period also seems quite probable. Preliminary research also seems to support this hypothesis, indicating that younger adults are more self-directed than older adults in Central Europe while this pattern was less strong in Western Europe, according to Schwartz's Universal Human Values Scale data collected as part of the ESS (Varnum – Wolchik 2007; see figure 10). Other approaches have sought to explain differences in values in different European regions based on reform since the communist period, mainly through a comparative approach (Schwartz – Bardi 1997). There is much left to be done to explore these and other aspects of democratization in Central Europe.

Summary

The political and economic transition in Central Europe has had fundamental consequences for the way people think about their lives, the social world, and their sense of well-being. These consequences are only now beginning to be explored, but it seems clear so far that: 1) Central Europeans have a more internal locus of control now than during the communist period, 2) Central Europeans make more dispositional attributions for others' behaviour now than during the communist period, 3) that younger Central Europeans have been better able to

adapt to the transition than older Central Europeans and have higher subjective well-being in part as a consequence, and 4) democratization has led to overall increases in SWB in Central Europe since the end of communism. Democratization also seems to have led to increases in general trust and self-direction.

One implication of this research is that frequently observed cross-cultural differences may not be temporally stable. Indeed research on Central Europe have tended to demonstrate that change at the cultural level can in fact occur very rapidly in response to dramatic political and economic change. While psychological processes like attribution may be strongly rooted in culture, rapid changes in these dimensions appear to be possible. Research examining the impact of political and economic change in Central Europe also suggests that cultural psychologists should begin to conduct longitudinal research in North America and East Asia as well. Research in societies that are likely to experience major changes in the near future (conducted both pre- and post- transition), such as Cuba and Belarus, would also provide an interesting basis for comparative study.

One of the more impressive elements of the transition has been how quickly Central Europeans have been able to adapt. The post-communist period has been in many ways a traumatic and chaotic one, yet the literature reviewed shows that Central Europeans have been remarkably resilient and shown an incredible ability to adapt quickly to social change. Over the course of one generation, Central Europeans have shifted their patterns of attribution, developed a more internal locus of control, and have become more self-directed. This ability to adapt is also evident in well-being. After the initial shock of transition and declines in subjective well-being in the early years of the post-communist period, Central Europeans are now happier and more satisfied with their lives than they were on the eve of communism's collapse. While younger Central Europeans have adapted more quickly to changes in their societies, it has become apparent that these changes are not merely confined to younger adults (for example older Central Europeans have shown shifts toward internal locus of control and it appears that declines in their well-being are levelling off). While younger adults may rightly be considered the beneficiaries of democratization, if present trends continue it seems likely that the older Central Europeans will also reap some of the same benefits.

While levels of education also have a significant impact on the variables discussed in this paper, the findings are preliminary and beyond the scope of the present review. This is not to say that there are no effects for level of education, but rather that once more extensive analysis has been completed the author and his collaborators plan to publish a detailed report on the differential impact of transition on people of different socioeconomic status in Central Europe.

Future research examining the interaction of other variables with these phenomena in the context of post-communist Central Europe may yield a more detailed picture of the mechanisms through which transition has led to psychological change.

Future research taking a longitudinal approach will shed more light on the impact of transition in Central Europe and will increase our understanding of the process of cultural change.

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Fig. 1. Levels of Freedom of Choice/Control over time (WVS) 10pt scale

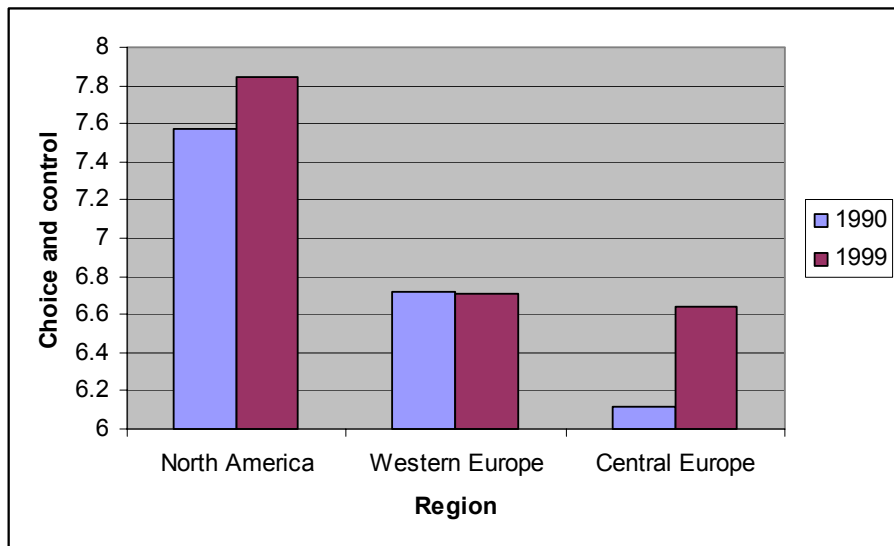


Fig 2. Levels of freedom of choice/control by age and region

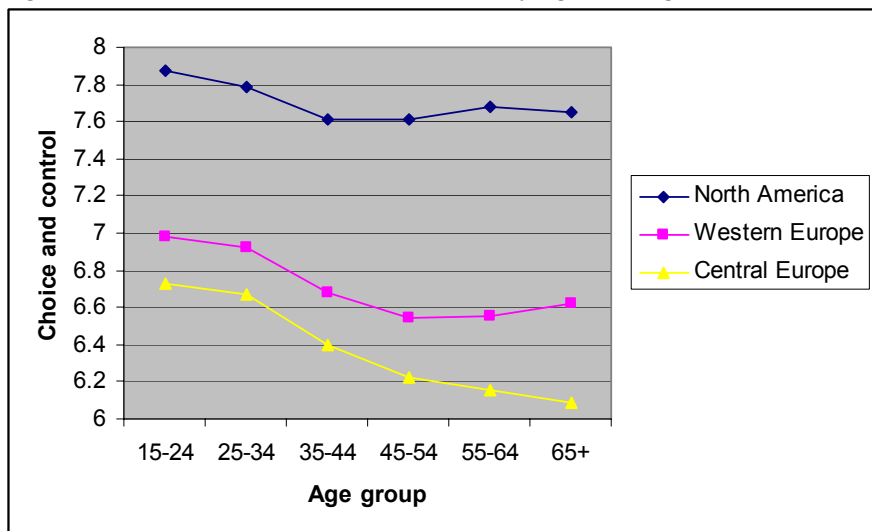
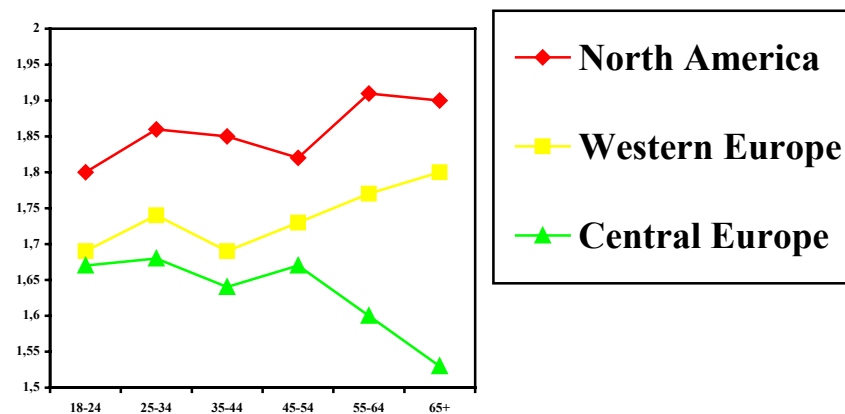


Fig. 3. Priming Stimuli



Fig. 4. Attributions for others' failures Pew GAP by age and region



“1” = “society’s failures”, “2” = “individuals’ failures”

Fig. 5. Life Satisfaction over time and by age in the US and Slovakia WVS 10pt scale

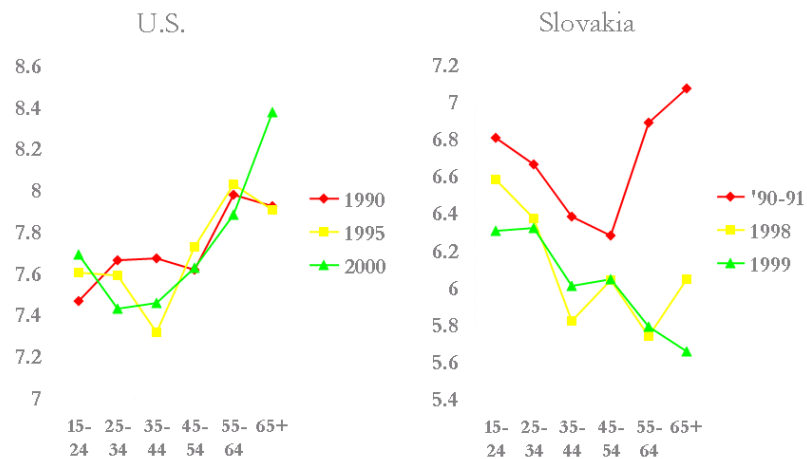
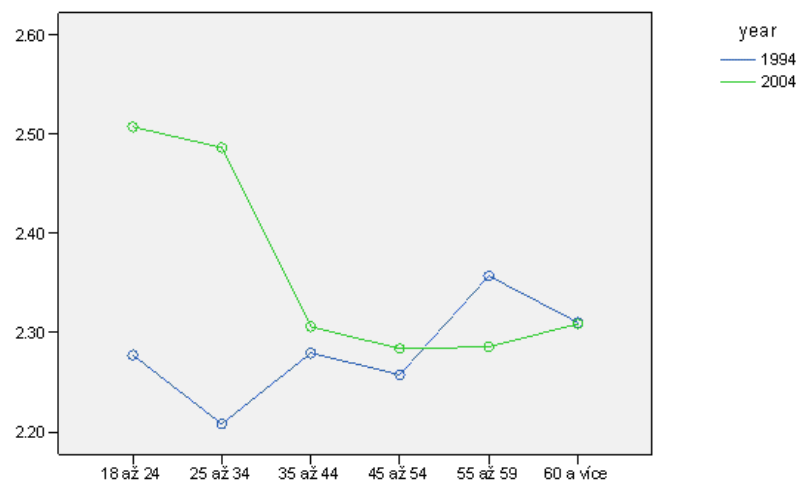


Fig 6. Life satisfaction (reverse scored so higher scores = higher levels of life satisfaction) by age over time in Czech Rep. and Slovakia (1994, 2004) 4pt scale



Year x Age interaction (both samples combined): $F(5, 5746) = 3.20, p < .008$

Fig. 7. Happiness in the US and Slovakia WVS (composite data from 1990-2000) 4pt scale

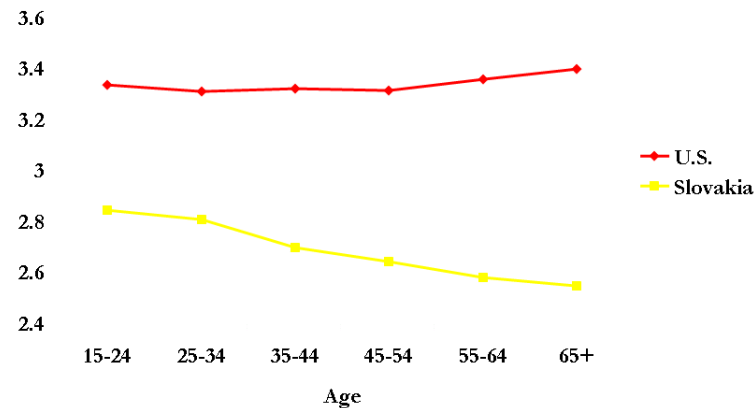


Fig. 8 Life satisfaction in Slovakia over time (data are reverse scored so higher scores = higher levels of well-being) (1994, 2004: Bútorová et al., 2004; 2007: Varnum & Bowman, 2008). 4pt scale

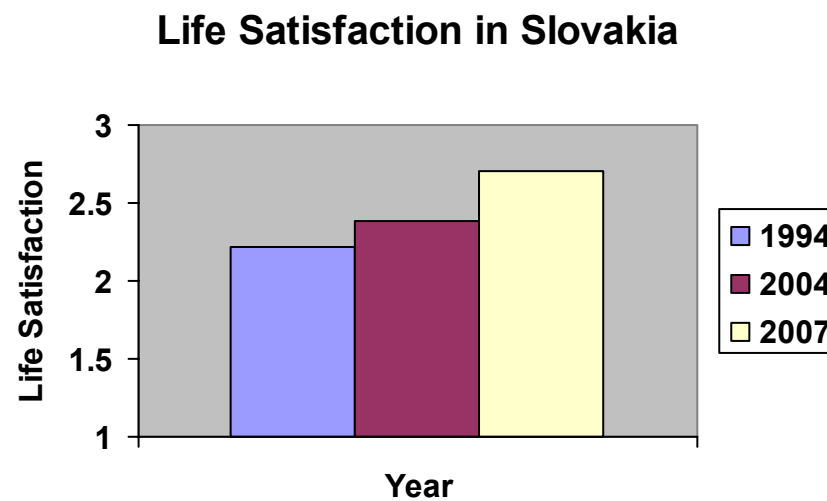
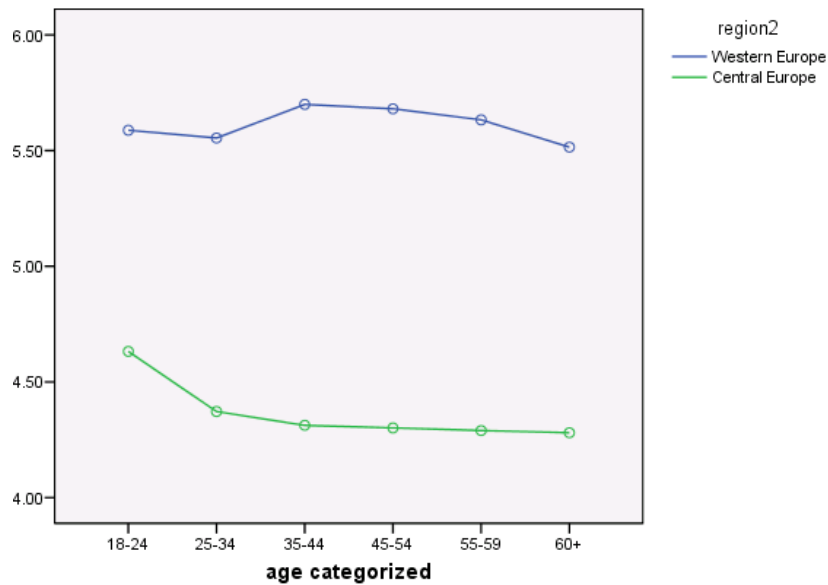
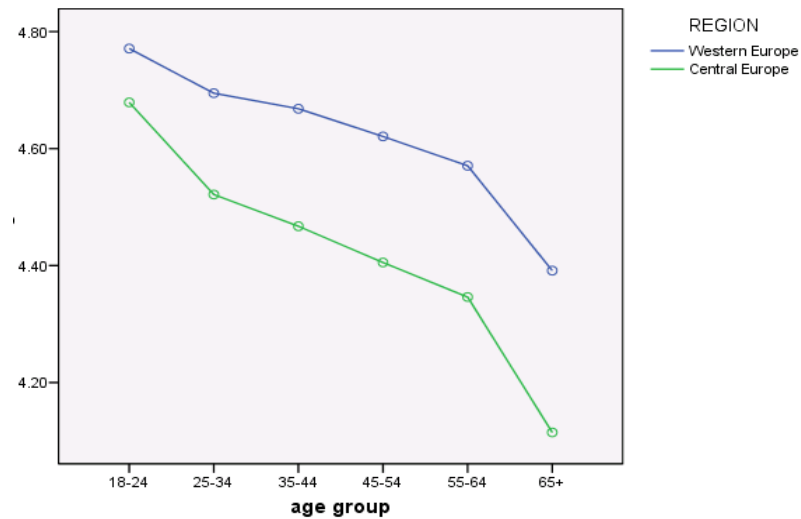


Fig. 9 Trust by age and region ESS waves 1-3 combined. 11pt scale



Age x Region interaction: $F(5, 93817) = 11.09, p < .001$

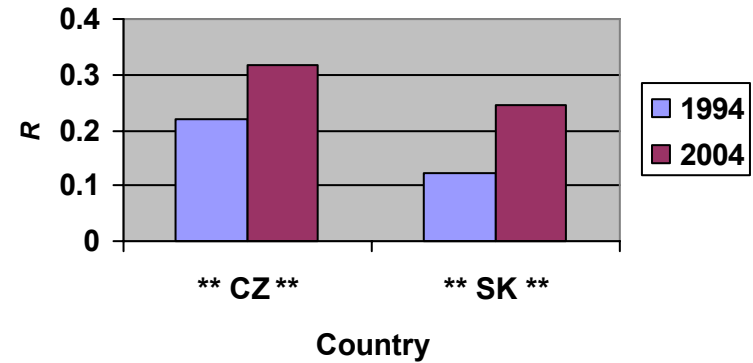
Fig. 10 Self-direction by age and region (reverse scored so higher scores = higher levels of self-direction) ESS wave 2. 6pt scale



Age x Region interaction: $F(5, 38614) = 6.31, p < .001$

Fig. 11 Perceived Democracy and Life Satisfaction

Perceived Democracy Index as a Predictor of Life Satisfaction in Czech Republic and Slovakia from 1994 - 2004



** $p < .001$

Table 1. Changes in Attribution/Locus of Control

Sample	Finding	sig.	Source
Slovak adults (nationally representative sample) Varnum & Bowman	Older Slovaks make more situational attributions for behaviour than do younger Slovaks on Kitayama's attribution vignettes	$F(5, 903) = 3.34, p = .005$	Varnum & Bowman Study 1, 2007
Slovak students	Slovaks primed with communist symbols have more interdependent theory of agency (situational attribution + external locus of control) than those primed with post-communist symbols	$t(28) = 2.17, p < .04$	Varnum & Bowman Study 4, 2007
Polish students	Polish students in 1991 had more internal locus of control on I.o.c. scale than Polish students in 1985	$t(198) = 1.91, p < .06$	Tobacyk, 1992
European adults (nationally representative samples) Central Europe: Czech Rep., Poland, Slovakia, Ukraine Western Europe: UK, Germany, France, Italy Pew GAP survey	Age x Region interaction: older adults in Central Europe make more situational attributions for failure than younger adults, older adults in Western Europe make more dispositional attributions for failure than younger adults	$F(10, 6294) = 5.85, p < .001$	Varnum & Bowman Study 2, 2007
Central European adults Czech Rep., Hungary, Poland, Slovakia, Slovenia World Values Survey	Increase in control over time Age x Time interaction: younger adults in Central Europe have more internal control than older adults and this difference increased over time	$F(3, 15351) = 54.80, p < .001$ $F(15, 15351) = 2.22, p < .005$	Varnum & Bowman Study 3, 2007
European adults; North American adults CE: Czech Rep., Hungary, Poland, Slovakia, Slovenia WE: UK, Germany, France, Italy NA: Canada, US World Values Survey	Time x Region interaction: large increase in sense of control over time in Central Europe, smaller increase in North America, no change in Western Europe	$F(2, 27079) = 37.86, p < .001$	Varnum & Bowman Study 3, 2007

Table 2. Increases in Subjective Well-Being over time

Sample	Finding	sig.	Source
Czech adults (nationally representative samples) European Social Survey waves 1 & 2	Increased life satisfaction over time (2002/3 – 2004/5)	$F(1, 4323) = 3.23, p < .08$	Varnum, Bowman, Nisbett, & Wolchik, 2008b
Polish adults (nationally representative samples) European Social Survey waves 1, 2, & 3	Increased happiness over time (2002/3 – 2006/7) Increased life satisfaction over time (2002/3 – 2006/7)	$F(2, 5524) = 26.77, p < .001$ $F(2, 5513) = 50.79, p < .001$	Varnum, Bowman, Nisbett, & Wolchik, 2008b
Slovak adults (nationally representative samples) European Social Survey waves 1 & 2	Increased happiness over time (2004/5 – 2006/7) Increased life satisfaction over time (2004/5 – 2006/7)	$F(1, 3227) = 14.95, p < .001$ $F(1, 3242) = 34.66, p < .001$	Varnum, Bowman, Nisbett, & Wolchik, 2008b
Slovene adults (nationally representative samples) European Social Survey waves 1, 2, & 3	Increased happiness over time (2002/3 – 2006/7) Increased life satisfaction over time (2002/3 – 2006/7)	$F(2, 4406) = 10.47, p < .001$ $F(2, 4403) = 14.05, p < .001$	Varnum, Bowman, Nisbett, & Wolchik, 2008b
Slovak adults (three nationally representative samples) 1994, 2004 : Bútorová, Hartl, & Wolchik 2007: Varnum & Bowman	Increased life satisfaction over time (1994 – 2007)	$F(2, 3612) = 131.94, p < .001$	Varnum, Bowman, Nisbett, & Wolchik, 2008b
Slovaks and Americans (nationally representative samples) World Values Survey (1990 -2000)	Age x country interaction: Older Slovaks are less happy than younger Slovaks, Americans show the opposite pattern	$F(5, 8393) = 15.05, p < .001$	Bowman, Varnum, & Nisbett, 2008
Slovaks and Americans (nationally representative samples) World Values Survey (1990 -2000)	Age x country interaction: Older Slovaks have lower levels of life satisfaction than younger Slovaks, Americans show the opposite pattern	$F(5, 8498) = 7.81, p < .001$	Bowman, Varnum, & Nisbett, 2008
Slovaks and Americans (nationally representative samples) World Values Survey (1990 -2000)	Age x country x time interaction: the age differences in life satisfaction get larger in Slovakia, with older adults going from indicating the highest levels of life satisfaction in the early 1990's to the lowest levels at the end of the decade while the American pattern remains consistent over time with older adults indicating the highest levels of life satisfaction	$F(10, 8498) = 3.39, p < .001$	Bowman, Varnum, & Nisbett, 2008

Table 3. Perceived Democracy and Life Satisfaction

Sample	Finding	Sig.	Source
Slovak and Czech adults (nationally representative samples) 1994, 2004 Bútorová, Hartl, & Wolchik	PDI predicts life satisfaction in Czech Republic in 1994	$\beta=.22, p < .001$	Varnum, Bowman, Nisbett, & Wolchik, 2008
	PDI predicts life satisfaction in Czech Republic in 2004	$\beta=.32, p < .001$	
	PDI predicts life satisfaction in Slovakia in 1994	$\beta=.12, p < .001$	
	PDI predicts life satisfaction in Slovakia in 2004	$\beta=.25, p < .001$	
Slovak and Czech adults (nationally representative samples) 2004 Bútorová, Hartl, & Wolchik	PDI predicts life satisfaction in Czech Republic in 2004 controlling for material well-being	$\beta=.21, p < .001$	Varnum, Bowman, Nisbett, & Wolchik, 2008
	PDI predicts life satisfaction in Slovakia in 2004 controlling for material well-being	$\beta=.15, p < .001$	
	*Data from 1994 on material well-being not available		