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DO VALUES CHANGE AFTER MAJOR LIFE EVENTS? A SCOPING META-ANALYTIC REVIEW

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Abstract

Given the growing data accumulated in the research of personal values change, we explored the existence and intensity of values change following major life events, whether individual or cumulative. A second objective of our research was to identify which of the major life events are studied, which study populations and their effects on personal values change.

A total of 35 studies met the criteria to be included in the present meta-analysis with an average sample of 5289 participants. The mean effect size obtained was small with a great heterogeneity and thus subgroup analyses required grouping personal values in their clusters. The results show that traumatic events (e.g., war) and economic events of the region had the largest effect on mean-level changes in conservation cluster values analysis, while the directed interventions brought medium level changes in the self-enhancement and self-transcendence cluster values, followed by economic events and education. Education and time were associated with small level changes in all value clusters.

Keywords: personal value, value change, event

Personal values are part of the factors influencing our behaviors, decisions and perception. They can also guide our behaviours regardless of our mood (Schwartz, 2012; Sagiv et al., 2017; Cieciuch, 2017). On the other perspective, our life contexts can influence and guide our personal values and behaviours (Egri & Ralston, 2004; Fung, 2016). In other words the way we act, the directions in which we choose to develop and invest our resources is correlated with the values we hold.

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The way we perceive, evaluate and respond to stressors is moderated by the values that are important for us (Sherman et al., 2011).

The universal character of values is agreed upon after more than 10 years of studies surveying participants from Europe Asia, Africa, America and Australia (Schwartz, 2012). These mental and abstract characteristics are at the base of the identity. They give us meaning, coherence and are important for our self-image (Schwartz, 2012).

The first paradigm approaching values suggested that values are, as well as personality traits, constant during the lifespan (Schwartz, 1992). More recent studies show however that values do change over the lifetime, but they need a major event in order to raise or lower in the personal rank of each individual (Sortheix, Parker, Lechner, & Schwartz, 2017; Bardi, Buchanan, Goodwin, Slabu, & Robinson, 2014).

Personal experiences contribute to formation of the rank order of values. They not only enhance the chance to develop and maintain personal values, but these events have the potential to inhibit them (Schwartz, 2011). Beyond knowing the motivation behind this research, it is important to define, explain and clarify the concepts studied.

Personal value theory

In the field of personal values, there is an agreement about the content of values, as Schwartz (2011) states, summarizing more than a decade of research. Personal values are cognitive representations of general, abstract life aspirations. These aspirations are considered desirable by the person holding them (Schwartz, 1992). Personal values are abstract mental constructions that are build verbally and textually (Wilson & Dufrene, 2009).

The explaining model most used for presenting personal values is the one proposed and validated by Schwartz (1992). This theoretic model displays the ten universal values on a circle, grouped in four clusters. This clustering is based on the motivational similarities and dissimilarities that are at the bases of values (Schwartz, 2006).

The self-transcendence cluster contains universalism and benevolence. Achievement, power and hedonism form the self-enhancement cluster. The conservation cluster groups tradition, conformity and security. The openess-to-chance cluster includes hedonism, stimulation and self-direction. Some of the values are anxiety based, for example, security, tradition and others are anxiety-free, like stimulation and self-direction. The visual representation of this scholastic categorization is observable in figure 1., representing the four clusters (Schwartz, 2006).

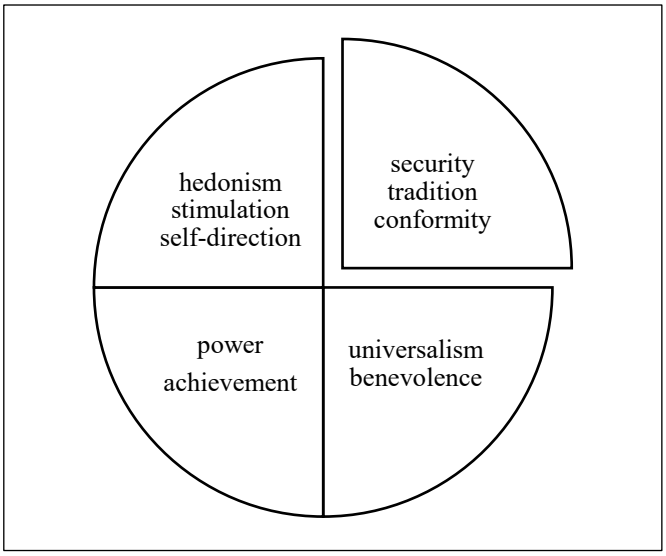

Figure 1. The 4 clusters of Schwartz's personal values model

Major life events and priming

Life events are major subjective and objective disruptive factors of everyday life. Life events can be seen from a stress point of view or from a developmental perspective. In the developmental perspective only transitions are considered life events. This is because transitions disrupt the normal daily life of people, bringing discontinuity in their space. One particular aspect of this type of events is the awareness of the person transiting it (Filipp & Aymanns, 2009).

The major event occurs in the lifespan, bringing chances, and the person walks throught it conscious, adapting to the new conditions imposed by it (Filipp & Aymanns, 2009). Some examples of major life events are divorce, a new born baby, the transition from education to work, economic crisis, war.

Do values change during the lifespan?

Experiencing major life events has been associated with value change in individuals (Bardi, Lee, Hofmann-Towfigh, Soutar, 2009). This changes can occur in a conditional manner, in accordance with the circular model of values. This means that if the importance of a value increases, the compatible values tend to increase similarly and conflicting values may decrease (Schwartz, 2011).

The present meta-analysis

The current meta-analysis aimed to explore the existence and intensity of value change after major life events. We didn't hypothesize a direction, only an effect, in general, of life events on the hierarchy change of personal values (Boer & Fischer, 2013; Riley, 2017). A second objective of our research was to identify which of the major life events are studied, which study populations are measured and the analysis methods for this type of change that are being used.

Methods

Inclusion criteria

To be included, studies had to fulfill a number of criteria. First, the main outcome of the study had to be personal values. The values had to be measured before and after the major life event or the intervention or for the cohort studies, two times, for one cohort or for two cohorts. Secondly, the predictor or the independent variable had to be a life event or a controlled intervention meant to enhance or decrease the importance of a personal value or more, in this predictor is included passing of time, even if it is not an event. Some studies were excluded because not enought quantitative data was provided, for example, they measured once, or we found some studies where they shown the rank difference score, but did not provide any before or after scores and standard deviations. We only included peer reviewed studies published in English. The complete selection process was documented by the standards from Cochrane, using the PRISMA Flow diagram, as fig. 2 illustrates.

Literature search

We used different methods in order to find as many befitting articles. The first refined literature search was conducted in May 2020, reran the search in 2022, and a third time in 2024, finding new studies each time. We used a search string with variations adapted to the database filters. It had a combination of keywords for: life event, life transition, personal value, value change. For some of the data bases we were forced to shorten the string because of the limits imposed by the search function. The data bases we searched were: Pubmed, PsychInfo, Scopus, Science direct, Proquest, PsychArticles, Web of Science, Wiley. We also included articles that fit the criteria, but were found from other sources. These sources were other searches unrelated to the current study. You can find this summaries in the PRISMA flow figure 2.

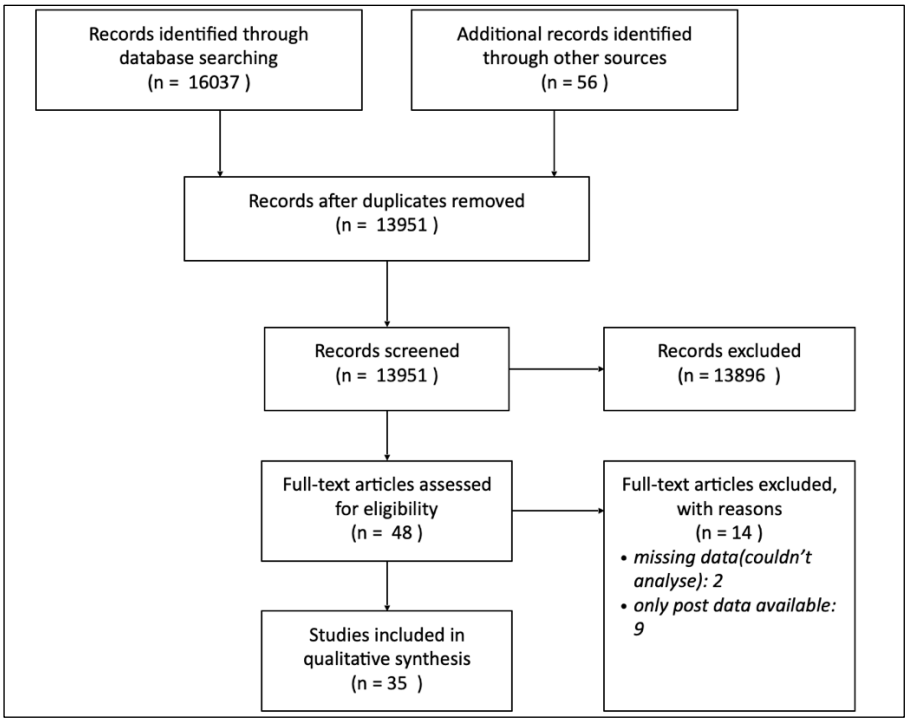

Figure 2. PRISMA Flow

Exclusion reasons

The excluded studies were missing data, on one we could not acces the results, only the explanation or the studies reported only a rank difference, no scored and standards deviations for the two times of the measure of perosnal values. Those had only one time measure, not making a two times comparison so we could not use the data in order to undestand the change whitin that group.

Study variables/data extraction

Personal values. The majority of the studies included in analysis used Schwartz's 10 personal values model, measuring values based on this paradigm. No study used another model, similar to this one and the base for the development of Schwartz's model: Rokeach's system (Rokeach, 1973).

Types of life event. The studies included evaluated the impact of education, emigration, war, terrorist attacks, newborns, shifting from school to the workplace,

interventions, economic crises, socio-political regional changes. We grouped education as a cluster for university courses, police training (of non-police recruits), high school courses an any other type of formal education identified in studies.

Population samples. We did not opt for a specific population, we gathered the articles to explore which populations are represented in these studies. We coded population samples for general population, students, children, adolescences and soldiers. Most studies were design to asses the difference between before and after the major event, with a few cohort studies which used cross-sectional measures and longitudinal studies.

Populations investigated in these studies are selected from a vast array of regions, from Europe, America, Asia. Each sample is composed, as reported, of people from a single country, exception being the studies that looked at a full continent or a larger region.

Analysis of effect sizes / meta-analytic procedure

Taking into account that the majority of studies used Schwartz's model for assessing personal values, we decided to break the analysis into the four clusters. For each individual cluster we run the analysis to investigate the effect of all events, education, war and terrorism, newborn, socioeconomic change in the region, emigration, intervention and time. Of course, some of this analysis were not valid because only one or none of the studies identified measured that specific cluster in relation with one of the events.

We grouped values outside of Schwartz's model in the main clusters. We mainly did this because the values and their definitions complied with those in the main model. For example, in the self-enhancement cluster we included self-fulfilment and capability along the three classic values, power, achievement and hedonism. Another cluster is conservation, where we added conservationism to the already specified tradition, conformity and security.

The studies selected in this meta-analysis are diverse in the outcomes and factors measured. All thought "personal values" is one concept, measuring these values implies we measure 10 or more continuous variables. We grouped the values in clusters, as research supports the hypothesis that similar values vary the same (Schwartz, 2011). This large display of outcomes and factors requires the use of a random-effects model, assuming there is much heterogeneity in data. We also considered every mean of every value as an outcome, not the mean of the study, if it was presented, because of the complex display of outcomes (Tufanaru, Munn, Stephenson & Aromataris, 2015; Kelley & Kelley, 2012).

The studies included in the analysis of the effect size provided the means and standard deviations for both before and after the event or intervention. Also, most of the studies included has small sample sizes, so we opted for *g,* over *Cohen'd.* In the case of big samples, these two types of difference analysis offer similar results (Ellis, 2010). The statistical analysis was run using the Comprehensive Meta-Analysis (CMA), using the main features for multiple group means.

Results

Publication bias

One of the important errors in assuming meta-analysis results is considered to be due to publication bias (Sterne & Egger, 2005). We examined the symmetry of the funnel plot for cluster analysis and the asymmetry does not raise concerns (Becker, 2005). We assumed that because some of the samples included in this meta-analysis are relatively large, N>40.000 and some are small, with N greater than 20, the number of unpublished studies needed to reduce the effect size would be large. We also included only peer reviewed studies to insure a greater quality for the results, reducing the risk of enhancing publication bias by selecting only studies from specific research groups known by our team (Ferguson & Brannick, 2012).

Study characteristics

Thorough the search we identified 13951 studies. We ran the search twice, them we added the already selected articles that could match the criteria. All these studies were included in all of the selection phases, from screening to full text trimming. Two individual scientists screened and selected the articles and examined the quality of the studies.

A total of 35 studies met the criteria to be included in the present meta-analysis with an average sample of 5289 participants, with a maximum of 54,931 and a minimum of 36 subjects. We included both small group, whitin group and cohort samples, with participants from a variety of age groups, from adolescence to +60. The sampled population was from Europe, Asia, America and Pacific Island.

The major events were mostly non-traumatic, with the exception that the war experiences and terrorist attacks, that can be considered traumatic events. The studies that used war as an event did not measure or screen for possible mental health related issues in the selected sample. The most analyzed event was education: higher

education, college, high-school and medium length training (a couple of months) and the least analyzed event was social-economical change: political revolution, economic development.

Mean level changes in values

The combined effect of all events on all values, .328, is significant $p < 0.05$ ($p=0.013$), with $I^2=97.70$, but the heterogeneity is too high to consider a global effect (Hak, van Rhee & Suurmond, 2016). This could mean that in the situation of a major event that changes the life circumstances, for example, a new education cycle, a newborn, a job change, a regional move, could be associate or even considered as a predictor for a change in the preference of personal values.

The subgroup analysis requested grouping personal values in their clusters, and measuring how much they changed for each event or groups of similar events. The four clusters, self-enhancement, openness to change, conservation, self-transcendence were analyzed for: education, time, war, newborn, emigration, short intervention, economic event of the region. Significant cluster results for the mean-level changes on personal values across time and events are presented, in addition to the interpretation, in tables 1,2,3 and 4 and figures 3,4,5 and 6. All results reported in this tables are the significant results from the analysis. All the analysis that used only one study or had no study to analyze were excluded from the reported data.

Self-transcedence cluster

The self-transcedence cluster showed a pattern of small significant increases for economic events (*G = .200, SD = .102*), education (*G = .312, SD = .057*), time (*G = .372, SD = .061*) and the combined events (*G = .321, .026*). A medium significant effect on self-transcedence values had the intervention (*G = .507*).

Table 1. Mean-level changes in self-transcedence values

Event	*K*	*Hedges G*	*SD*	*Variance*	*CI*		*Z*	*P*
					Lower limit	*Upper limit*		
All events	34	0.321	0.026	0.001	0.271	0.372	12.949	0.000
Economic event	2	0.200	0.102	0.010	0.001	0.399	1.970	0.049
Education	11	0.312	0.057	0.003	0.201	0.424	5.470	0.000
Intervention	6	0.507	0.117	0.014	0.277	0.736	4.330	0.000
Time	8	0.372	0.061	0.004	0.252	0.491	6.088	0.000

Note: K = number of samples; SD = standard error; CI = 95% random effects confidence interval

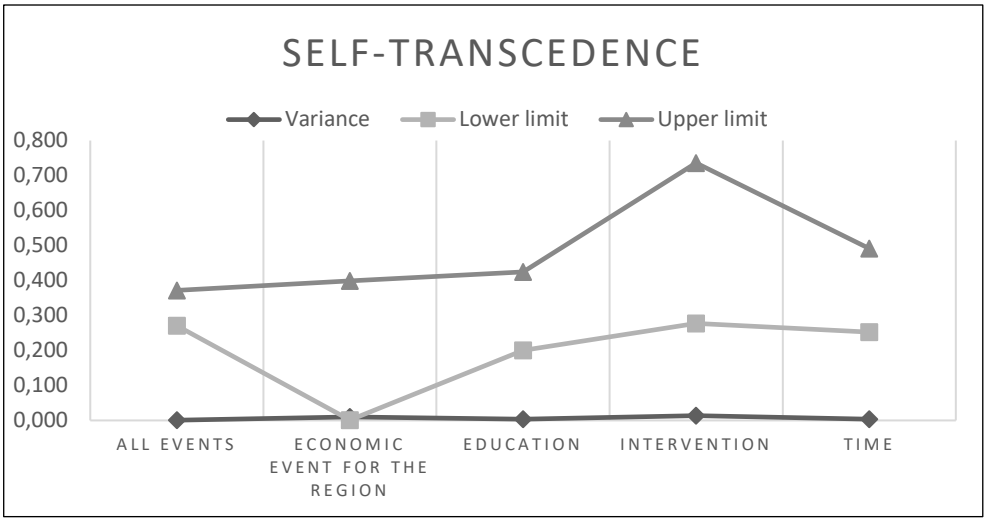

Figure 3. Mean-level changes in self-transcedence values

Conservation cluster

Economic events of the region had the biggest effect on mean-level change in conservation cluster analysis for adult population (*G = 0.790, SD = .138*). The difference identified for war and terrorist attack event was conducted on both child and adult samples, with a big effect size (G = .936) with a confidence interval that supports the significance of the result *(CI = .622; 1.249*), but a standard deviation of *5.847*. We assumed the value of this standard deviation is due to the small samples and the different age groups that were combined. Time had a medium effect on this cluster (G = *.456, SD = .064*) whereas all events (*G = .399, SD = .032*), education (*G = .322, SD = .051*) and emigration (*G = .222, SD = .075*) had small significant effect.

Table 2. Mean-level changes in conservation values

Event	*K*	*Hedges G*	*SD*	*Variance*	*CI*		*Z*	*P*
					Lower limit	*Upper limit*		
All events	25	0.399	0.032	0.001	0.337	0.461	12.659	0.000
Economic event	2	0.790	0.138	0.019	0.520	1.060	5.730	0.000
Education	9	0.322	0.051	0.003	0.222	0.422	6.313	0.000
Emigration	4	0.222	0.075	0.006	0.075	0.368	2.965	0.003
Time	7	0.456	0.064	0.004	0.331	0.581	7.161	0.000
War	3	0.936	5.847	0.026	0.622	1.249	5.847	0.000

Note: K = number of samples; SD = standard error; CI = 95% random effects confidence interval

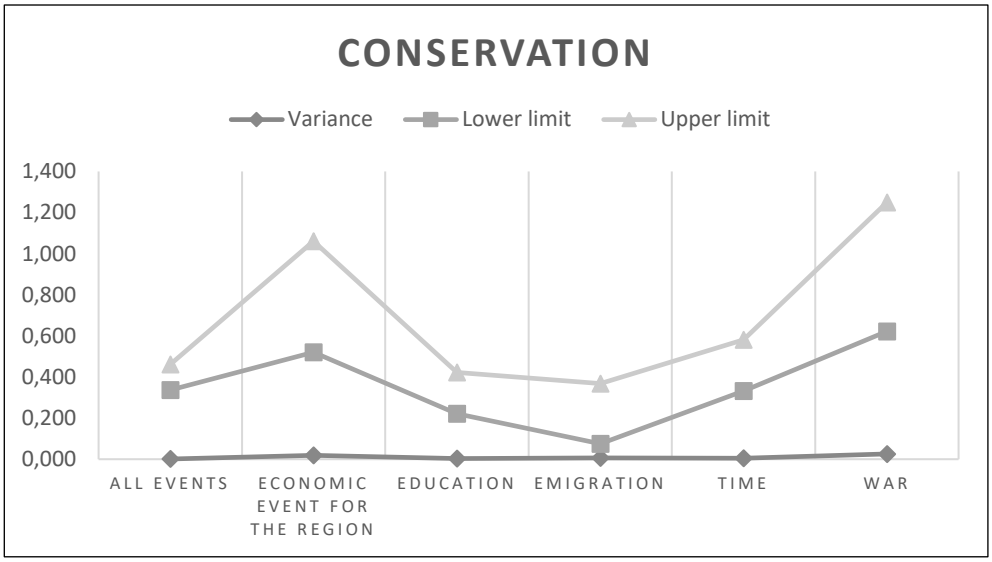

Figure 4. Mean-level changes in conservation values

Self-enhancement cluster

For self-enhancement cluster the effects of intervention stand out (*G = .503, SD = .173*). In the uncontrolled conditions, the effects were small: all events combined (*G = .334, SD = .025*), economic events for the region (*G = .373, SD = .103)*, education (*G = .285, SD = .044)*, emigration (*G = .203, SD = .070*), and time (*G = .284, SD = .046*).

Table 3. Mean-level changes in self-enhancement values

Event	*K*	*Hedges G*	*SD*	*Variance*	*CI*		*Z*	*P*
					Lower limit	*Upper limit*		
All events	26	0.334	0.025	0.001	0.284	0.384	13.085	0.000
Economic event	2	0.373	0.103	0.011	0.171	0.576	3.614	0.000
Education	11	0.285	0.044	0.002	0.200	0.371	6.552	0.000
Emigration	3	0.203	0.070	0.005	0.065	0.341	2.886	0.004
Intervention	3	0.503	0.173	0.030	0.164	0.842	2.905	0.004
Time	7	0.284	0.046	0.002	0.193	0.375	6.114	0.000

Note: K = number of samples; SD = standard error; CI = 95% random effects confidence interval

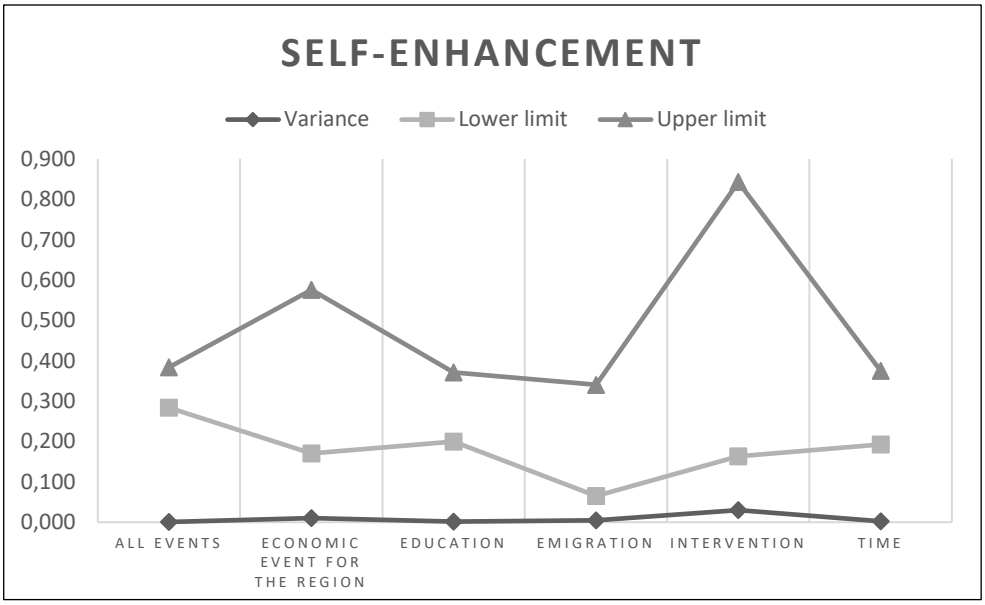

Figure 5. Mean-level changes in self-enhancement values

Openness to change cluster

The results for openess to change cluster provide small significant effect sizes, with time having a slightly larger effect (*G = .362, SD = .0.72*), followed by all events combined (*G = .298, SD = .026*), economic events for the region (*G = .225, SD = .069*), education (*G = .225, SD = .042*) and emigration (*G = .205, SD = .101*).

Table 4. Mean-level changes in openness to change values

Event	*K*	*Hedges G*	*SD*	*Variance*	*CI*		*Z*	*P*
					Lower limit	*Upper limit*		
All events	21	0.298	0.026	0.001	0.247	0.350	11.320	0.000
Economic event	2	0.225	0.069	0.005	0.091	0.360	3.280	0.001
Education	10	0.225	0.042	0.002	0.143	0.306	5.400	0.000
Emigration	3	0.205	0.101	0.010	0.007	0.402	2.028	0.043
Time	6	0.362	0.072	0.005	0.222	0.502	5.055	0.000

Note: K = number of samples; SD = standard error; CI = 95% random effects confidence interval;

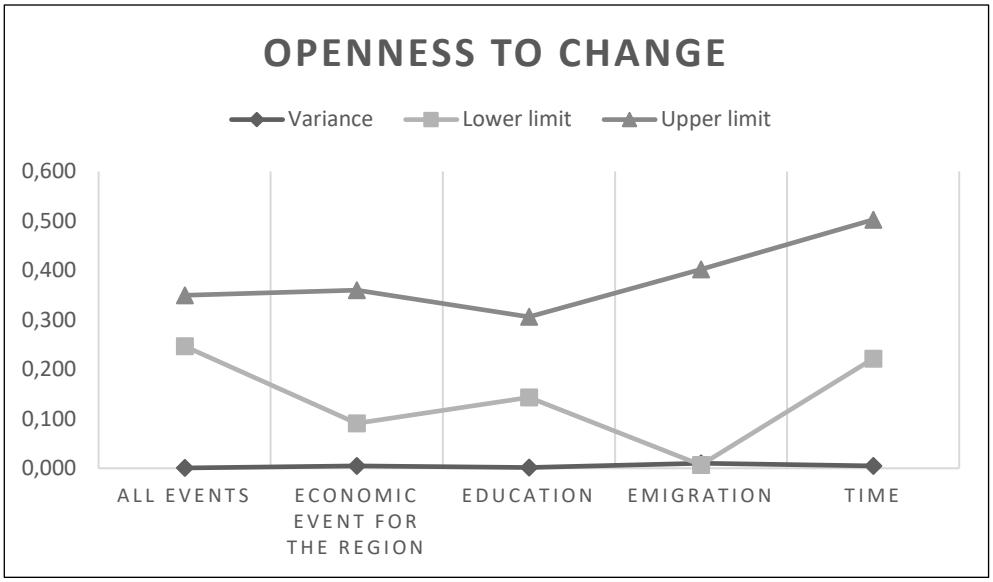

Figure 6. Mean-level changes in openness to change values

Discussion

Our results show that major life events can indeed be a predictor for the change in importance of one or more type of values and their mobility on the personal values priorittising hierarchy. We have found a significant small effect size for the overall changes in personal values following major life events and a large heterogeneity for the studies included. Since the studies look at different populations being affected by different events at different times, we continued to analyze changes in values subgroups in relation to subgroups of major life events. When looking at values cluster subgroups, we have found that different kinds of events impact differently on the clusters of values. Traumatic events (e.g., war) and economic events of the region had the largest effect on mean-level changes in conservation cluster values importance, while the intervention brought medium level changes in the self-enhancement and self-transcendence cluster values, followed by economic events and education.

Interventions type of events had a medium effect on self-transcendence and self-enhancement values. This can partly be explained by the common factor of the clusters, the anxiety-free base for these values, because those people tend to be more open to change and less scared to do things differently (Paunonen & Ashton, 2001; Paunonen, 2003). This could mean that interventions should be aimed at enhancing

these two clusters by priming or by long term interventions, like counseling and coaching. We must take into account that the interventions are implying a controlled event, hence their larger effect.

War and terrorist attack tend to have a larger effect on the importance of values, but there are a few studies that use samples from population that went thought these types of events. This is the reason for having a significant results only on conservation values mean-level change, despite it being the largest in the whole meta-analysis (G = .936). Such a traumatic life event seems to affect people in becoming more apreciative and fond of security, tradition since they had experienced their lack and gained understanding of their importnance for a good or valued life.

Time and education had a small effect on the mean-level change in all values, in all clusters, with a larger effect size of time for opennes to change clustter values. Time was conceptualized as growing in age or the passing of time, in different studies. This effect could by used to explain part of the total effect from other events that are long-term, like education, emigration, political events in the region or economic development. As the passing of time is a common partly explaining predictor, we could propose that from now on the studies could take into account this factor when pondering about the effects of major life events on the value hierarchy.

We expected small effect sizes taken into consideration the number of samples and the number of subjects in some of the samples and the results support this assumption. Given the fact that values, like personality traits, are part of the identity and pattern of human behaviour, it is expected to have smaller effect sizes from all the events (Parks, Feldman & Bardi, 2015), except those which are having the traumatic potential, as war and terrorist attack. This finding implies that group level of studying personal values is valid and should be looked into more, especially as a trend for smaller or more niche populations.

While interpreting the results, we might consider that these studies are pioneering the path of personal values change. Taking into account the time effect discussed before, we can assume there are other factors that can influence these results. Starting with the individual characteristics of sampled subjects, the randomization of the selection process, most studies use convenience samples of people going through the events. Partly, the variability of the chance can be explained by the use of different scales or the variation in the time period between the initial measure and the measure post event.

Limits

Results from previous studies show that values measured with Portrait Value Questionaire and Schwartz Value Survey yield different relations with personality (Parks-Leduc, Feldman, Bardi, 2015). This means that the current results can be

biased by the use of those two different scales and the combined analysis of their measures.

Some of the samples used in calculating the combined effect sizes are small and this is a source of error. There is a possibility that using G instead of Cohen's D can lead to higher error associated with small samples. (Lin, 2018)

There are several factors that could have contributed to this effects, within is the time effect. As results support, time had an effect on personal values so we have to be careful when interpreting the resulted data because in all other events effect could be a factor of time. Moreover, each event has a limited number of reseach teams evaluating it from the perspective of personal value change.

Future results

The field can expand in the direction of testing these changes in personal values by controlling the environment and the event. This means that using guided imagination, films and virtual reality, we can verify some of the mechanisms and directions of change in a variety of populations. More priming intervention studies are needed in order to conclude that the values do change in this priming process. Follow up measures are also needed because is would be valuable to know for how long do values stay in the new order before they regress to the initial hierarchy.

More leaterature and research is need for verifying replicability of the results in the same and different participants. We consider this to be fundamental with the argument that it postulated the current state of the research, with identifying the gaps: not enough replicating studies for each event or value type or participant, some proof of change with no event being the main predictor for the change, as the studies where the passing of time was the sole measurement, the need to verify other parameters which could be useful in understanding the change, as are mindset change, how influencable those people are, their personality, their trait emotions, if they have any, the level of self -awareness. We also consider that being a well-being and life span area of human functioning, we could be interested in asking how this changes corelate with improved or reduced well-being, life satisfaction and cognitive dissonance.

Conclusions

Our results demonstrate that value hierarchy changes on small groups and niche population samples, not only in the cohort analysis, conducted on houndreds of thousands of people at once. This supports the necessity of developing new studies that identify specifically how values change for specific events and people cand be beneficial in understanding an individualized change, not just a generic one and what mechanisms sustain the chance. This research field can have profound implications

in explaining mental health fluctuations in the general population. More research is needed that measure the relation between how much personal values change, the severity of mental health problems and how affected is the life satisfaction of the person. We consider that this deepened understanding in the field of personal values research could potentially improve our understanding of both changes in mental functioning and identity.

Authors' Notes

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