Intolerance of Uncertainty – Related Aspects of Planning for the Future During the Pandemic

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Abstract

Thesis. The ability to set long-term goals is associated with lower levels of Intolerance of Uncertainty (IU), but the pandemic has interrupted the established planning strategies. This study aims to clarify the differences in the planning horizons before and during the pandemic for people with different levels of IU.

Methods. The study was conducted in March-April 2021. 120 respondents filled in Intolerance of Uncertainty Scale, short form (IUS-12), Zimbardo Time Perspective Inventory (ZPTI) and answered two additional questions about the duration of the planning period. Then comparison and correlation analyses were conducted.

Results. Respondents with different levels of IU also differ in terms of their Time Perspective (TP) profiles. During the pandemic, average planning horizons became shorter for all respondents. The subgroup with low IU showed that planning is associated with the present TP scales. There was a direct association between attitudes towards the Future and planning horizons in the subgroup with average IU level. Planning horizons associated with Past Negative and Present Fatalistic TP were present in the group with high IU level.

Conclusion. During the pandemic, levels of IU and planning horizons have shown an inverse relationship. The pandemic and inability to plan in advance in a habitual way primarily affect people who tend to feel confused in conditions of uncertainty and insecurity, that is, people with high scores on the Inhibitory Anxiety scale in the IU questionnaire. Peculiarities of how the planning strategies change in subgroups with different levels of IU before and during the pandemic are discussed.

Key words: intolerance of uncertainty, planning horizon, time perspective, pandemic, COVID-19

Introduction

Uncertainty is the reality of our life which has been amplified by the raging pandemic. People cope with unpredictability by trying to look into the future and plan the events of their lives. Some people are able to do

it with ease, whereas others find it difficult. People with different levels of Intolerance of Uncertainty (IU) make decisions differently and look to the future in different ways.

IU is described as "the incapacity to endure the aversive (i.e., fearful) response triggered by the perception of one or more salient or key unknowns and sustained by the associated perception of uncertainty" (Carleton, 2016, p. 32). Numerous studies suggest that IU is an underlying transdiagnostic factor for symptoms of depression, generalised anxiety disorder, OCD (Carleton, 2016; MkEvoy et al., 2019; Ouellet et al., 2019) and PTSD (Boelen, 2019; Raines et al., 2019). It is difficult for people with low levels of uncertainty tolerance to withstand ignorance or unpredictability for a long time, therefore they are disposed to making quick decisions (Luhmann et al., 2011) and being judgmental, which clearly (even if incorrectly) separates the known and understandable from the unfamiliar and equivocal.

Begum Satici, Mehmet Saricali, Seydi Satici, and Mark Griffiths (2020) found that during the pandemic, Intolerance of Uncertainty was associated with the fear of COVID-19 and had a significant negative direct effect on mental wellbeing. The study of Michelle Paluszek et al. (2021) showed a direct correlation between the IU and COVID-19-related distress, which confirms the natural inverse relationship of IU and resilience (Cooke2013). During a pandemic, intolerance of uncertainty is associated with negative beliefs and expectations, and with an increase in psychological symptoms in adults (Batıgün & Ertürk, 2021).

Since IU is associated with anxiety, in a stressful situation of a pandemic, high levels of IU correlate with fast emotional exhaustion (di Monte et al., 2020) and with the use of predominantly non-adaptive coping strategies (Rettie & Daniels, 2021).

Quarantine restrictions increase levels of unpredictability, that is why the urge and habit of planning (as one of adaptive coping strategies) was under threat last year. On the one hand, high levels of IU stimulate anxious COVID-related information seeking (Singh et al., 2020), aggravate cyberchondria (Wu et al., 2021) and cause increased cautiousness (Taylor, 2019); on the other hand, high levels of anxiety related to uncertainty inhibit tolerance to continuous obscurity and planning for distant future.

Qing Yang et al. (2021) used the theory of Yaacov Trope and Nira Liberman (2010) and tested an assumption that respondents capable of long-term planning would have lower levels of IU. Construal level theory (CLT) suggests that psychologically objects in people's consciousness can be close or distant. People describe "closer" objects with more details and have more emotions related to them. Accordingly, having an ability to look at their life from a broader perspective, people are less emotionally involved in experiencing current events, and reduce anxiety of uncertainty by looking through the binoculars of long-term planning. A study by Yang et al. (2021) discovered an inverse relationship between levels of IU and attitude towards the future.

We can assume that the customary planning horizon is related to the level of IU in the same way. Seeking more clarity and getting bogged in details, people who hate uncertainty prefer making detailed short-term plans which allow them to feel confident about their implementation. The higher their intolerance of uncertainty, the more likely it is that they make detailed and short-term plans. This raises an interesting question: in what way have customary planning horizons of people with different levels of IU changed during the lockdown period?

Although the correlation between attitude towards the future and intolerance of uncertainty has already sparked the interest of some researchers (Durak Batıgün & ŞEnkal Ertürk, 2021; Rönnlund et al., 2017; Yang et al., 2021), as far as we know, correlation between the IU and the planning horizon, as well as other Zimbardo Time Perspective scales has not been studied before. At the same time, there is some evidence that an unbalanced time perspective profile, especially fixation on negative events of the past and a fatalistic view of the current situation, also leads to the use of non-adaptive coping strategies (Doruk et al., 2015; Kaya Lefèvre et al., 2020) and prolonged stress response (Papastamatelou et al., 2020; Sword et al., 2014). Therefore, it can be assumed that respondents with different levels of IU will differ not only in terms of the Future scale but also in other Time Perspective scales.

Now people all over the world, regardless of their initial attitude to uncertainty, find themselves in a situation where it is impossible to do long-term planning. The purpose of the research is a comparative analysis of the planning horizon in people with different IU levels during pandemic. In order to check how unfamiliar altered life conditions affect planning horizons, we decided to compare the planning horizons of people with different levels of IU before and during the pandemic. Besides, in order to get a more coherent picture of responses to uncertainty and changes in plans, we also included in the study the attitudes towards the past and the present.

Method

Sample Group

A group of 120 people took part in the survey. The data were collected in four regions of Ukraine in March-April 2021. At that time, these regions were considered orange zones, which is one step short of the strictest quarantine measures. Orange zone means restrictions on mass events, visiting cinemas and other cultural institutions, obligation to wear face masks and to keep 1.5 m distance. The data were collected using an online survey service. Respondents received a small financial reward for completing the tests. The average age was M=40 (SD=8.9; min=25, max=55), the sample was gender-balanced and consisted of 60 men and 60 women. Education: 77.5% of respondents have higher education, 13.3% graduated from high

school. 40% of respondents live in villages/towns with a population of up to 50 thousand people, 19.2% live in the cities with a population of 50-250 thousand people, 40.8% live in the cities with a population of over 250 thousand people. Marital status: 65% are married, 9.2% live with a partner, 12.5% are divorced, 10.8% are single, 2.5% are widowers/widows.

The research procedure was approved by the ethics section of the research board in the Institute of Social and Political Psychology (the research board follows the guidelines of APA Ethics Code, 2017).

The study was conducted using the following methodologies: The short version of the Intolerance of Uncertainty Scale (Carleton, Norton, & Asmundson, 2007), the Ukrainian version (Hromova, 2021), Zimbardo Time Perspective Inventory (Senyk, 2012; Zimbardo & Boyd, 1999). Cronbach's Alpha for IUS-12 total score was 0.91, for IA scale α=0.84 and for PA scale α=0.85. Descriptive statistics for IUS-12 total score were M=37.8, SD=8.7, Skew=0.4, Kurtosis=0.38. According to the data, the sample was split onto three subgroups with low levels of IU (IUS-12<30; n=26, 15 men and 11 women), average levels of IU (30<IUS<46; n=74, 36 men and 38 women) and high levels of IU (46<IUS<60; n=20, 9 men and 11 women).

In the present sample Cronbach's alpha of the ZPTI was: for PN α=0,83; for PP α=0,62; for PH α=0,76; for PF α=0,74 and for F α=0,70. As can be seen, the Past Positive scale showed a poor level of consistency in this sample. This scale regularly shows the lowest consistency scores in other studies as well (Sircova et al., 2014). Descriptive statistics of key variables are presented in Table 1.

Additionally, respondents were asked to answer two questions regarding their planning horizons before and during the lockdown: 1) "How long ahead did you usually plan your life (before the pandemic)?" and 2) "How long ahead are you planning your life now (during the quarantine)"? Respondents could choose from six options ranging from "one day" to "more than a year."

The data were checked for normal distribution using the Kolmogorov-Smirnov coefficient. Since the data were not normally distributed, further analysis was carried out using nonparametric criteria. Using the Wilcoxon test, we compared the mean planning horizon before and during the pandemic. Comparative analysis of the variables of general sample and subgroups was carried out using Mann-Whitney and Kruskal-Wallis tests. Correlation analysis was carried out using the Spearman's p test. The calculations were performed using the SPSS 23.0 program.

Table 1

Descriptive Statistics of Key Variables, n=120

Variable	α	M	SD	Skew	Kurtosis
IUS-T	.91	37.8	8.7	.04	.38
PA	.85	22.5	5.2	-.09	.27
IA	.84	15.3	4	.14	.19
PN	.83	37.4	7	.13	-.15
PP	.62	31.2	3.7	-.51	.45
PH	.76	53.7	7.6	.16	.10
PF	.74	30.9	5.5	.08	-.33
F	.70	42.8	5.1	.08	.85
Group with low levels of IU (IUS<30), n=26					
IUS-T	-	26.2	4.6	-1.9	3.18
PA	-	15.7	3.1	-.09	1.8
IA	-	10.5	2.6	-.55	-.003
PN	-	33.7	6.3	.47	2.13
PP	-	30.7	4.2	-.57	.13
PH	-	54.7	8.7	-.11	.39
PF	-	29	5.6	.11	-.02
F	-	40	5.1	-.55	1.85
Group with average levels of IU (30<IUS<46), n=74					
IUS-T	-	38.2	3.7	.38	-.49
PA	-	22.9	2.5	.18	-.46
IA	-	15.3	2.1	.37	-.43
PN	-	37.5	6.8	.09	-.09
PP	-	30.9	3.3	-.81	.77
PH	-	52.9	6.3	.14	.66
PF	-	31	4.8	.07	-.30
F	-	42.9	4.7	.53	.80
Group with high levels of IU (46<IUS<60), n=20					
IUS-T	-	51.4	3.9	.73	-.28
PA	-	30.1	2.6	.45	-.79
IA	-	21.3	2.4	-.45	.19
PN	-	41.7	6.3	-.09	-.98
PP	-	33.1	3.8	-.12	-.83
PH	-	55.1	10.1	.01	-1.3
PF	-	33.2	6.9	-.24	-.92
F	-	46.2	4.3	.19	-1.2

Note: IUS-T – Intolerance of Uncertainty Scale, total score; PA - Perspective Anxiety Scale; IA - Inhibitory Anxiety Scale; PN – Past Negative; PP – Past Positive; PF – Present Fatalistic; PH – Present Hedonistic; F - Future

*p<0.05; ** p<0.01.

Source: own research.

Analysis Results

A comparison of planning horizons before and during the pandemic showed that the planning interval during the pandemic went down (T-Wilcoxon=-8.85, p<0.001) from medium terms (from one month to six months) to short terms (from one day to a week). Such a result was predictable and was observed both in the general sample and in three subgroups formed according to the level of Intolerance of Uncertainty. Comparative analysis of Time Perspective scales in groups with different levels of IU showed some difference in the following time perspective scales: PN (W=15.32, p<0.001) and F (W=18.53, p<0.001). The first and third subgroups also differ on the Present Fatalistic scale (U=203, p <0.05).

Comparison of subgroups with different levels of Intolerance of Uncertainty revealed significant differences in planning horizons during the pandemic (PF_2: KW=8.81, p<0.05). The group with high levels of IU significantly differed from the other two, the average ranks of the planning horizon of the group with a high level of IU were lower than those in other subgroups. This means that during a pandemic, respondents with high Intolerance of Uncertainty plan their lives for shorter periods of time.

In the regular mode of planning (PF_1–before the pandemic), respondents with different levels of IU showed no significant differences in their planning horizons. We have not found any significant differences related to gender and age in the general sample. If we consider planning horizons in subgroups with different levels of IU, there is a slight difference between men and women in the subgroup with a low level of Intolerance of Uncertainty (U= 42, p<0.05). Within this subgroup, on average (under normal conditions) women plan for a slightly longer period (M=4.27, SD=1.19) than men (M=3.13, SD=1.19). This difference levelled during the pandemic.

As a next step, we analysed correlations of the studied variables. The results are given in Table 2.

Table 2

Correlations (ρ) Between Planning Horizon Before and During the Pandemic and the Level of Intolerance of Uncertainty, n=120

Variable	PF_1	PF_2	IUS-T	PA	IA
PF_1	1	0.57**	-.06	-.02	-.11
PF_2		1	-.19*	-.14	-.23*
IUS-T			1	.94**	.90**
PA				1	.72**
IA					1

Note: PF_1 - planning horizon before the pandemic, PF_2 - planning horizon during the pandemic; IUS-T – Intolerance of Uncertainty Scale, total score; PA - Perspective Anxiety Scale; IA - Inhibitory Anxiety Scale

*p<0.05; ** p<0.01

Source: own research.

As can be seen in Table 1, the total score of the IU is inversely related to the planning horizon during the pandemic. Such a result is "produced" by the Inhibitory Anxiety scale. This scale shows how typical it is for a person to feel confusion and stupor when they face surprises and uncertainty. Therefore, the higher the level of inhibitory anxiety, the stiffer and more confused people feel in situations with many variables and no clarity or predictability about the consequences of the decisions they have to make. It is also more difficult for them to get together and structure the time of their lives.

If we consider the correlation between Time Perspective scales and planning horizons under normal conditions and during the quarantine, we get the following results (Table 3).

Table 3

Correlations (ρ) Between Time Perspective Scales and Planning Horizons in Subgroups with Different Levels of Intolerance of Uncertainty Correlations (ρ) Between Time Perspective Scales and Planning Horizons in Subgroups with Different Levels of Intolerance of Uncertainty

Variable	PF_2	PN	PP	PF	PH	F
Group with low levels of IU (IUS<30), n=26						
PF_1	.75**	-	-	-.44*	-.43*	-
PF_2	1	-	-	-.44*	-	-
Group with average levels of IU (30<IUS<46), n=74						
PF_1	.58**	-	-	-	-	-
PF_2	1	-.29*	-	-.41**	-	.28*
Group with high levels of IU (46<IUS<60), n=20						
PF_1	-	-.48*	-	-.49*	-	-
PF_2	1	-	-	-	-	-
General group of respondents						
PF_1	.57**	-.20*		-.30**	-	-
PF_2	1	-.28**	-.21*	-.38*	-	-

Note: PF_1 - planned before the pandemic, PF_2 - duration of planning horizon now (during the pandemic); IU - Intolerance of Uncertainty; IUS – Intolerance of Uncertainty Scale, total score; PN – Past Negative; PP – Past Positive; PF – Present Fatalistic; PH – Present Hedonistic; F - Future
*p<0.05; ** p<0.01
Source: own research.

Discussion

The aim of the study was to test the hypotheses about the difference in the planning horizons of respondents with different levels of Intolerance of Uncertainty before and during the pandemic. The study partially confirmed the assumption of negative relationship between levels of IU and planning horizons. It manifested itself at a statistically significant level during the pandemic.

The data in Table 2 can be interpreted as follows: under normal circumstances, people make plans the way they are used to, the way dictated by the total of their personality traits or required by the specificity of their work process. Therefore, we have not identified a linear relationship between levels of IU and the duration of periods for which people make plans. However, during the quarantine people were forced to change their usual way of living and the connection between planning and levels of IU became visible. Moreover, the higher the intolerance of uncertainty (in particular, inhibitory anxiety, that is, the reaction of stupor and confusion in situations of uncertainty), the shorter the planning horizon. However, this relationship can be viewed from another perspective: the more unpredictability around and the shorter the period for which one can plan their actions, the higher their level of inhibitory anxiety and more confusion and chaos in their decision-making and actions. This inverse relationship can also be explained by the avoidance strategy inherent for people with high levels of Intolerance of Uncertainty (Flores et al., 2018). Unwillingness to look into the future and disbelief in the advisability of planning can be associated with fatalistic views of their role in shaping their lives.

This explanation is also derived from the analysis of correlations between planning horizons and Time Perspective scales in subgroups with different levels of IU (Table 3). Planning in all subgroups is associated with fatalistic attitudes towards the present (the Present Fatalistic scale of Zimbardo questionnaire). The more fatalistic people's views at their current life, the shorter their planning horizons. This relationship manifested itself in all subgroups, regardless of the level of Intolerance of Uncertainty. However, there are also differences.

Planning horizons before the pandemic, under normal circumstances, are associated with the Fatalistic and Hedonistic scales in the subgroup with low Intolerance of Uncertainty, that is, in people who tolerate the unknown without problems. Either fatalism or desire to enjoy life right now lead to situations when such people consider long-term planning either meaningless because "nothing can be changed and whatever happens, happens regardless of my efforts" or depreciate it because of their unwillingness to delay momentary joys for the sake of long-term goals. This relationship may also be caused by lower levels of anxiety about the future. After all, people with high levels of tolerance of uncertainty are confident about their ability to successfully cope with any surprises (Kornilova, 2016) and pay much less attention to planning and control. Under the changed conditions of forced lockdown, for the subgroup with low levels of IU (that is, with no issues with unpredictability) connection between planning horizon and the Present Fatalistic scale remains the same. We can assume that the importance of taking pleasure right now has naturally decreased due to the pandemic, and making decisions about the deadlines and plans is based on beliefs in significance of one's own efforts or on submitting oneself to chance.

The subgroup with an average level of IU under normal conditions showed no significant relationship between planning horizon and Time Perspective scales. During the pandemic (PF_2), planning horizon is negatively related with the Past Negative and Present Fatalistic scales, also there is a direct correlation with the Future Time Perspective. Only the group with the average value of IU showed a correlation between the planning horizon and the Future Time Perspective, which may suggest a nonlinear relationship between these variables. The Future scale of Zimbardo's questionnaire reflects a tendency towards planning, self-discipline, faith in one's own efforts, willingness to prefer long-term goals over momentary entertainments. Respondents with low levels of Intolerance of Uncertainty have confidence in their ability to cope with unexpected circumstances and therefore have no additional motivation for systematic work towards long-term goals. Therefore, for example, high tolerance of uncertainty is associated with lower academic performance (Kornilova, 2016). On the other hand, intolerance of uncertainty keeps people from looking into the future, since this is a direct contact with the unknown. In long-term planning, as a rule, there are too many probabilities and variables which cannot be calculated in advance. Setting long-range goals involves an ability to accept a likely necessity to change plans, to adjust the path, to respond to new input, which is difficult for people prone to anxious reactions to surprises.

Lack of connection between planning horizon and Future scale in subgroups with low and high IU, as well as in the general group may indicate that respondents' motivation for long-term planning is associated not with their aiming for positive future, but with their unwillingness to repeat the mistakes of the past (correlation with Past Negative) or to put up with the current situation (correlation with Present Fatalistic). That is, the prevailing motivation is not pursuit of success, but the avoidance of failure.

The third possible reason for such a result is the peculiarity of the Ukrainian version of Zimbardo's questionnaire for the Future scale. Available studies of the relationship between attitudes towards the future and IU used either an extended version of the ZTPI Future scale (Chinese adjusted version, Yang et al., 2021) or a special questionnaire for attitudes towards the future (Durak Batıgün et al., 2021). Other researchers also pointed out the necessity to refine the Future scale in the classic Zimbardo questionnaire (Jankowski et al., 2020; Stolarski et al., 2020). The difference between the used tests and the basic version of Future TP in Phillip Zimbardo's questionnaire lies primarily in the evaluative questions about the future (positive or negative expectations) and questions about belief in the justifiability of the efforts.

Another possible reason for the discrepancy between our data and the results obtained by Yang et al. (2021) (positive correlation between IU and the Future, unlike the negative one in Yang's study) may be explained by the fact that his study (presumably, conducted during the lockdown)

shows the current situation and respondents' reaction to their attitude to the future during the pandemic. It does not take into account previous strategies and reactions. In this regard, it would be useful to conduct a longitudinal study in order to clarify the relationships. Although many studies did not find clear any age difference in the levels of IU among respondents (McEvoy et al., 2019), Nicolas Carleton, Gabrielle Desgagné, Rachel Krakauer, and Ryan Hong (2018) described an overall increase in the level of IU with the course of time from 1999 to 2014. Moreover, an increase in the level of IU is positively related to growth in mobile phone penetration and Internet usage. During the pandemic, the impact of this factor has risen many times over, which can affect average levels of IU and attitudes to future plans.

The group with high levels of IU shows that their planning horizons in everyday life are associated with negative attitudes towards the past and with fatalistic views of the present. That is, the higher the Intolerance of Uncertainty, the more people are focused on unsuccessful experiences of the past and the more pessimistic they are about the present and their ability to influence it, the shorter their customary planning horizons. During the pandemic and with increased level of uncertainty, no linear relationship was found between planning horizons and Time Perspective scales in this subgroup. This result can be explained by the fact that respondents with high Intolerance of Uncertainty are very nervous about the pandemic and global unpredictability, their actions are ad hoc and chaotic. At the same time, in other subgroups, the attitude towards planning is only slightly adjusted taking the circumstances into account. The latter statement is supported by the strong significant correlation between the planning horizon before (PF_1) and during the pandemic (PF_2). This relationship manifested itself in the first two subgroups, which may suggest that respondents with moderate IU accustomed to looking at their actions from a broader perspective are more likely to keep doing the same despite the difficulties caused by external circumstances.

Limitations

The correlational design of the study does not allow to draw firm conclusions about the direction of the discovered connections. It is also advisable to continue the study with a larger sample. The weak α-Cronbach score of the Past Positive scale and some limitations of the Future scale of ZTPI compel us to be careful with the conclusions about these time perspectives. It may also be necessary to use other methods to measure attitudes towards the future and its relationship with planning horizons. The relationship between IU and the attitude to time requires further research.

Conclusion

The results of comparative and correlational analyses suggest that high levels of Intolerance of Uncertainty are associated with shorter planning horizons during the pandemic During the pandemic, average planning horizons became shorter for all respondents. Respondents with different levels of Intolerance of Uncertainty differ by the Time Perspective scales of Past Negative, Present Fatalistic and Future. The relationship between attitudes towards the future and planning horizons manifested itself in respondents with average levels of IU, although the relationship with the future requires additional research using other questionnaires. The group with low IU showed that planning is associated with the present time perspective scales (Hedonistic and Fatalistic). The group with high IU showed a connection between planning horizons and the time perspective scales – the Past Negative and Present Fatalistic. The pandemic and inability to plan in advance and in a habitual way primarily affect people who tend to feel confused in conditions of uncertainty and insecurity, that is, people with high scores on the Inhibitory Anxiety scale in the IU questionnaire.

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