

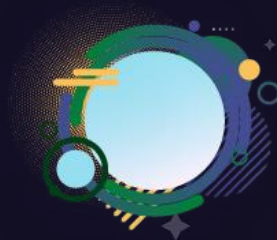


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THE EFFECTS OF INTOLERANCE OF UNCERTAINTY ON SELF-CONTROL

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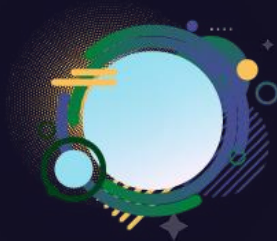
INTOLERANCE OF UNCERTAINTY

- “Intolerance of Uncertainty” (IU): extent to which people are distressed and impaired by the presence of uncertainty (Carleton, Norton, & Asmundson, 2007):
 - Prospective IU: distress caused by uncertainty and attempts to reduce future uncertainty
 - Inhibitory IU: difficulty with functioning in uncertain conditions
- Intolerance of Uncertainty Scale (Carleton et al., 2007)
 - “Unforeseen events upset me greatly.”
 - “Even the smallest doubt can stop me from acting.”



INTOLERANCE OF UNCERTAINTY & PSYCHOLOGICAL SYMPTOMS

- IU is significantly associated with symptoms of anxiety disorders (Boelen, Reijntjes, & Carleton, 2014)
 - A mean correlation of .57 between IU and symptoms of generalized anxiety disorder (Gentes & Ruscio, 2011).
- Depression
 - A mean correlation of .53 between IU and major depressive disorder symptoms (Gentes & Ruscio, 2011).
- IU is also associated with negative, repetitive thinking in response to stressful situations.



INTOLERANCE OF UNCERTAINTY MAY UNDERMINE SELF-CONTROL

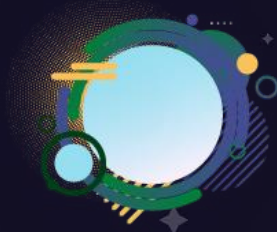
Due to the worry, rumination, and anxiety that stem from IU, IU may undermine individuals' abilities to maintain self-control, especially in stressful contexts.

Inhibitory IU should be especially relevant (difficulty functioning in the face of uncertainty).



SELF-CONTROL

- Self-control has many aspects:
 - Delay of gratification (DG): individuals' willingness to choose a larger reward in the future instead of a smaller reward immediately (Luhmann et al., 2011; Casey et al., 2011)
 - Negative urgency: tendency to act rashly when feeling bad (Lynam et al., 2006).



THE PRESENT STUDIES: DOES INTOLERANCE OF UNCERTAINTY UNDERMINE SELF-CONTROL?

- Study 1: Correlational design investigating associations between questionnaire measures of intolerance of uncertainty and self-control.
- Study 2: Experimental study examining whether increasing IU leads to lower delay of gratification.
- Study 3: A longitudinal study determining whether IU predicts problems with self-control under extreme stress of COVID-19.



STUDY 1: IS INTOLERANCE OF UNCERTAINTY ASSOCIATED WITH LOWER SELF-CONTROL?

- **Purpose:** Correlational design examining whether intolerance of uncertainty is associated with measures of lower self-control
- **Participants:** 367 college undergraduates
 - 22.6% male, 76% female, and 1.4% other or no answer
 - 70.6% European American or White
- **Measures:**
 - Intolerance of Uncertainty Scale (IUS-12; Carleton et al., 2007)
 - Prospective IU
 - Inhibitory IU
 - Self-control scale (Tangney et al., 2004)
 - Negative Urgency scale (Lynam et al., 2006)
- **Procedures:** Participants completed questionnaires online



STUDY 1: RESULTS AND DISCUSSION

- Overall IU was both negatively related to self-control and positively related to negative urgency ($r = -.12$ and $r = .29$)
 - Inhibitory IU was negatively related to self-control and positively related to negative urgency ($r = -.20$ and $r = .33$)
 - Prospective IU was associated with negative urgency ($r = .22$), but not with self-control.
- These results suggest that there are significant modest to moderate associations between trait IU and self-control.



STUDY 2: DOES IU CAUSE LOWER DELAY OF GRATIFICATION?

- **Purpose:** an experimental study examining whether increased IU causes lower delay of gratification (an aspect of self-control).
- **Participants:** 253 college undergraduates
 - 27.7% male, 71.1% female, and 1.2% other or no answer
 - 75.9% European American or White
- **Procedure: Experimental session**
 - Randomly assigned to 1 of 2 groups: high IU OR low IU. IU level was manipulated by reading articles about uncertainty.
 - Completed dependent measure: Delay of Gratification task




STUDY 2: DOES IU CAUSE A LOWER DELAY OF GRATIFICATION?

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Learning to Love Uncertainty

If you know the end, why would you read the book?
Published on March 14, 2013 by Daniel Roberts, Ph.D.



Daniel Roberts, Ph.D., is the deputy director of the Nathan Kline Institute for Psychiatric Research in Orangeburg, NY. His new book, *Carving a Path in an Uncertain World*, will be available on May 25. [More...](#)

My brother and his wife were thrilled when they got tickets to the St. Louis Cardinals' post-season game. When we had dinner together this past weekend, my sister-in-law, a die-hard fan, told me that she was so nervous she could barely enjoy the game. My brother replied, "Well, it wouldn't be any fun if you knew who was going to win ahead of time, would it?" Just a few hours later, my friend told me how he hadn't yet watched the season finale of *Game of Thrones*, and how he'd had to work really hard to avoid spoiler alerts so that he didn't learn how the season ended before watching the finale.

These brief exchanges made me think about the nature of uncertainty. In the realm of entertainment, we instinctively know that uncertainty and suspense are crucial parts of what makes something enjoyable. We actually have to experience the process to get the full impact. But if you're like me, it's harder in real life to deal with uncertainty.

With time and experience, however, I have come to realize that, in order to be happy and fully enjoy what life has to offer, we need to embrace uncertainty as a fact of life. We need not fear uncertainty because it is one of the greatest sources of joy in our lives if we are open to it. By accepting and even valuing the fact that the future is uncertain, we are able to consider exciting challenges and new possibilities. For example, I was recently asked to speak at a conference in Belgium. I left part of my trip unplanned and unscheduled, assuming that something new and interesting may await me. And, then at the conference, I met a fellow researcher who shares many of my interests; I ended up spending a day with this man and his family touring parts of Brussels I had never seen before.

Being open to uncertainty allows us to enjoy the surprises that await us. Imagine a birthday party for you in which none of the gifts are wrapped in bright paper, bows or bags. The gifts are laid out for you to see. No surprise awaits you—just the certainty that what lies there is yours. Consider how much less fun this experience would be if you knew every gift you were about to receive.

So I ask you: Do you really want to know how the next ten years of your life will look like? I think not.

Evolution has prepared our species to embrace uncertainty. Imagine if our ancient ancestors had needed to know the future to feel comfortable in the present; our species would have died out a long time ago! Recent psychological research also supports the importance of accepting that we can't predict or control the future. A study headed by Dr. Shelly Healey of Yale University tracked a group of 300 people from the end of high school through middle age and showed that the people who were open to new possibilities as high school students turned out to have more satisfying, stimulating lives as middle aged adults.


Yes, uncertainty is part of the adventure of life. It is the stuff from which good movies (and good lives) are made.

Psychology Today

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Learning to Avoid Uncertainty

Always better to plan for what's coming next
Published on March 14, 2013 by Daniel Roberts, Ph.D.



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These brief exchanges made me think about the nature of uncertainty. In the realm of entertainment, we instinctively know that uncertainty and suspense are crucial parts of what makes something enjoyable. We actually have to experience the process to get the full impact. But if you're like me, it's harder in real life to deal with uncertainty.


With time and experience, I have come to realize that, in order to be happy and fully enjoy what life has to offer, we need to avoid the negative impact of uncertainty on our lives. We need to cope with the fact that 21st century life is so unpredictable that uncertainty can overwhelm us. We can easily become immobilized by the uncertainty and uncontrollability of the future. If we are not prepared, then the world may work against us. For example, I was recently asked to speak at a conference in Belgium. I failed to plan most of my trip. And, then at the conference, I met a fellow researcher who shares many of my interests; he and I decided to explore parts of Brussels that neither of us had seen before. However, due to poor planning, we missed our train, and ended up spending most of the day dealing with the details of getting from one place to another.

Planning for uncertainties allows us to cope with the anxiety brought on by unpredictability. Imagine a standardized test that determines your college placement (like the SATs) but that you couldn't prepare for. The material is completely unknown until you receive the exam. You get into the exam and discover you don't know most of the material, even though you are a bright, strong student. Imagine how distressing life would be if you couldn't plan for the future.

So I ask you: Do you really want to risk spending the next ten years of your life in a world where unexpected things are lurking around the corner? I think not.

Evolution has prepared our species to avoid uncertainty. Imagine if our ancient ancestors had failed to plan for the future and the potential threats they may encounter; our species would have died out a long time ago! Recent psychological research also supports the importance of trying to minimize the experience of future uncertainty. A study headed by Dr. Shelly Healey of Yale University tracked a group of 300 people from the end of high school through middle age and showed that the people who made careful plans for their lives as high school students turned out to have more satisfying, stimulating lives as middle aged adults.

Yes, uncertainty is a dreaded part of life, and it is best to minimize its negative impact as much as possible.



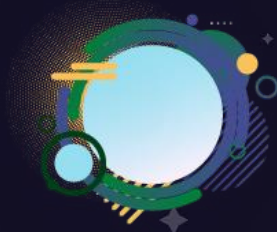
STUDY 2: RESULTS AND DISCUSSION

- Participants in the high IU condition were less willing to delay gratification than participants in the low IU condition, $F(1,251) = 6.89, p = .009$.
- IU caused a decrease in delay of gratification.



STUDY 3: DID PRE-PANDEMIC IU PREDICT PROBLEMS WITH SELF-CONTROL DURING COVID-19?

- **Purpose:** A longitudinal study determining whether IU (assessed before the pandemic) predicted problems with self-control under extreme stress of COVID-19
- **Participants:** 205 college undergraduates
 - 18% male, 81% female, and 1% other or no answer
 - 68.3% European American or White



STUDY 3: OVERVIEW, PARTICIPANTS, AND PROCEDURE, CONTINUED

- **Procedures:**

- T1 (October 2019 or early Feb 2020): pretesting trait IU.
- T2 (late April/early May 2020): mid-pandemic completed online study
 - state self-control
 - narrative coded measure of self-control
 - procrastination



STUDY 3: RESULTS AND DISCUSSION

- Correlations between pre-pandemic IU and mid-pandemic self-control measures:
 - Pre-pandemic inhibitory IU negatively predicted narrative and self-reported self-control and positively predicted procrastination ($r = -.17$, $r = -.18$, and $r = .17$).
 - Pre-pandemic prospective IU did not predict any measures of self-control or procrastination.
- These results suggest that IU predicts later problems with self-control in the context of a highly stressful and uncertain pandemic.



DISCUSSION AND IMPLICATIONS

- Summary:
 - All three studies showed that IU is associated with problems with self-control, and Study 2 provides evidence that IU may cause these problems.
 - Studies converge on the same conclusion using different methods and measures of self-control.
- Limitations
 - Samples of college undergraduates, predominantly female and white
- Implications
 - IU may play a causal role in problems with self-control, which has important clinical implications
 - People with IU may need additional support in developing greater skills in self-regulation, particularly during times of stress.



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THANK YOU FOR LISTENING!

ANY QUESTIONS?



Table 1. Correlation between components of Intolerance of Uncertainty, self-control, and negative urgency.

Variable	I	II	III	IV
I. Prospective IU	1	-	-	-
II. Inhibitory IU	.67**	1	-	-
III. Overall IU	.93**	.90**	1	-
IV. Self-control	-.027	-.20**	-.12*	1
V. Negative urgency	.22**	.33**	.29**	-.60**

p < .05*, p < .01 **



Table 2. Correlation between components of Intolerance of Uncertainty, Procrastination, self-reported self-control, and self-control from narratives

Variable	I	II	III	IV	V	VI	VII	VIII
I. Trait Inhibitory IU	1	-	-	-	-	-	-	-
II. Trait Prospective IU	.64**	1	-	-	-	-	-	-
III. Trait Overall IU	.88**	.93**	1	-	-	-	-	-
IV. State Inhibitory IU	.47**	.35**	.44**	1	-	-	-	-
V. State Prospective IU	.36**	.46**	.46**	.72**	1	-	-	-
VI. State Overall IU	.44**	.45**	.49**	.91**	.95**	1	-	-
VII. Procrastination	.17*	.02	.09	.37**	.15*	.27**	1	-
VIII. Self-reported Self-control	-.18*	-.06	-.12	-.34**	-.18*	-.26**	-.68**	1
IX. Narratives Self-control	-.17*	-.13	-.16*	-.28**	-.20**	-.25**	-.40**	.45**

p < .05*, p < .01 **

