

Sections

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Research Statement

As I started to read and understand psychology research, I became gradually more interested in, and amazed by, the clever study designs that were used to capture psychological concepts. My interests were further bolstered by neuropsychological cases and neuroimaging studies. My research examines self-regulation, which refers to any process that facilitates goal attainment, whether the goal is as simple as pressing a button or as complex as maintaining a healthy lifestyle. Saying that self-regulation is important in daily life is an understatement – it is studied across many fields, such as psychology, neuroscience, economics, education, and health, and has important implications for public policy. Given the importance of self-regulation in societal functioning, I am interested in understanding why people sometimes fail to achieve their goals, as well as the different ways to help people achieve their goals in the long run.

Goal Attainment Without Inhibition

My initial interest in self-regulation began when I was a research assistant administering neurocognitive assessments for studies that examined cognitive control. I soon had the opportunity in another lab to conduct my own study examining whether reappraisals (e.g. thinking at the superordinate level) affect self-control. This project allowed me to combine my interest in social and cognitive psychology, as we sought to examine whether reappraisals affect various indicators of self-control, including response inhibition (i.e., go/no-go task) and discounting of future rewards (i.e., delay discounting task), both of which are important facets of impulsivity (Mackillop et al., 2016). Distinguishing the effects of reappraisals on different facets of impulsivity is important because they manifest differently in the context of clinical psychology; for example, whereas problematic gamblers do not show abnormal motor response inhibition, pathological gamblers do (Brevers et al., 2012).

In another project on self-control, I have been working to examine motivation and the benefits of strategically giving into temptations, a process known as functional licensing (Prinsen et al., 2018). Emerging research suggests that giving into temptations can actually sometimes help people achieve their goals, and so we were interested in examining whether this occurs as a function of a person's motivation. In a series of cross-sectional studies, we found that having want-to motivation (i.e., genuinely enjoying pursuing a goal) was associated with functional licensing (i.e., temptations were not perceived as a threat to one's goal) and negatively associated with dysfunctional licensing (i.e., temptations were perceived to be a threat), which in turn promoted healthier eating (Wu, Werner, & Inzlicht, talk accepted at Canadian Psychological Association; Wu, Sparrow-Mungal, Werner, & Inzlicht, poster presentation accepted at the Society for the Science of Motivation). Expanding on these findings, I am currently helping to run a daily diary study to replicate these findings in everyday life. This project in particular has provided a great learning opportunity, resulting in two conference presentations (and one under review), co-authorship on the manuscript that is in-preparation, and support by the University of Toronto Excellence Award (\$6000).

Self-Control Strategies

To help people attain their goals, I am working on a second line of research examining regulatory strategies people use during goal pursuit. Recent theorizing (Duckworth et al., 2016) has identified different strategies that people can use in the pursuit of their goals, but so far

research has only examined these strategies in isolation. While this work sets an important foundation for understanding strategy use, people actually often use multiple strategies at the same time (e.g., Milyavskaya et al., 2020). To address this gap in the literature, for my honours thesis, I am examining the extent to which a person's strategy "toolbox" (i.e., the number of different regulatory "tools" a person has at their disposal) can enhance goal attainment. In an initial series of studies, we found that people were more likely to attain goals where they had more strategies compared to their other goals (Wu, Werner, & Ford, 2021, poster to be presented at the Society for Personality and Social Psychology). To replicate and extend these findings, as part of my thesis, I will further examine how a person's strategy "toolbox" can enhance goal attainment across health, finance, and academic goals. Overall, this project builds on previous research by considering the more complex dynamics of strategy use (e.g., beyond examining individual strategies), which has important implications for interventions (among both normal and clinical populations) and policy-based research on self-control (Fujita et al., 2020).

Throughout my undergraduate training, I have also learned about the importance of conducting research that is transparent and reproducible (e.g. pre-registration). I look forward to continuing to incorporate and learn more about these research practices in my graduate work.

Future Research

During my graduate studies, I plan to continue studying self-regulation, ideally by incorporating cognitive tasks and experience sampling in my research. For example, are people who are better at reorienting attention in the laboratory also more efficient at using attention-based strategies for self-regulation in day-to-day life? This is largely inspired by Berkman et al. (2011), who integrated neuroimaging and experience sampling methods. They found that the relationship between cravings and actual smoking in day-to-day life was reduced when there was greater activity in the brain during a response inhibition task in the laboratory.

Conclusion

Self-regulation is important and is studied by many different fields. My immediate goals are to learn about research, actually do and publish research, and collaborate with, and learn from, others. In the long-term, I hope to research and teach self-regulation using a multimethod approach, informed by not only its cognitive/social foundations, but also its manifestation in the brain and day-to-day life, for the purpose of helping people in the real world.

Raymond Wu

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Education

Honours B.Sc. (Highest Distinction) in Psychology 2016-2021
University of Toronto

Honors thesis: *Examining the use of self-control strategies during goal pursuit*
Supervisor: Dr. Brett Ford

Supervised Project: *Replicating and extending the effects of construal level on self-control*
Supervisor: Dr. Michael Inzlicht

Academic Awards

SPSP Diversity Undergraduate Registration Award – \$50 USD 2020

Psi Chi Undergraduate Research Grant – \$1500 USD 2020
The more the better? Examining the use of multiple strategies in the context of self-control

University of Toronto Excellence Award-Social Sciences & Humanities – \$6000 CAD 2020
Motivation, self-licensing, and goal attainment

University of Toronto Scarborough Dean's List 2018-2020

Research Experience

Undergraduate Researcher, Affective Science & Health Laboratory 2020-present
University of Toronto Scarborough

- Conducted data analysis
- Wrote abstracts for conferences
- Wrote proposals for grants
- Lead team of undergraduates in multi-lab replication project

Research Assistant, Whole Brain Modeling Group 2020
Krembil Center for Neuroinformatics, Centre for Addiction and Mental Health

- Introduced to programming simulations of transcranial direct current stimulation on resting state functional connectivity

Undergraduate Researcher, Toronto Laboratory for Social Neuroscience 2019-2020
University of Toronto Scarborough

- Designed and pre-registered research projects
- Programmed cognitive tasks and created questionnaires

- Wrote abstracts for conferences
- Wrote proposals for awards

Research Assistant, [Toronto Laboratory for Social Neuroscience](#)

2019-present

University of Toronto Scarborough

- Conducted electroencephalography (EEG) studies
- Conducted behavioural studies
- Currently learning EEG data analysis and will soon do it

Research Assistant, [Clinical Neurosciences Laboratory](#)

2019

University of Toronto Scarborough

- Conducted functional near-infrared spectroscopy (fNIRS) studies
- Conducted clinical neurocognitive assessments (Penn-CNP, WAIS-IV, D-KEFS, CPT-II)
- Performed data entry and managed data

Publications

Werner, K. M., McMillan, G., **Wu, R.**, & Milyavskaya, M. (in-preparation). The benefits of giving into temptation: Examining the relation between motivation and (dys)functional self-licensing during goal pursuit.

Hall, B. F., Wagge, J. R., Brandt, M. J., Chartier, C. R., Pfuhl, G., ... Werner, K. M., **Wu, R.**, Sparrow-Mungal, T., Charbel, R., Johnson, C., Milyavskaya, M., Inzlicht, M., ... Grahe, J. E. (*in principle acceptance*). Registered replication report: Turri, Buckwalter, & Blouw (2015). *Advances in Methods and Practices in Psychological Science*. Pre-print: psyarxiv.com/zeux9/

Conference Talks and Poster Presentations

Wu, R., Werner, K. M., McMillan, G., & Milyavskaya, M. (2021). *The relation between motivation and self-licensing during goal pursuit*. Poster submitted to the Motivation Science Preconference at the Convention of the Society for Personality and Social Psychology [Virtual].

Wu, R., Werner, K. M., & Ford, B. Q. (2021). *The more the better? Examining the relation between strategy repertoire and goal attainment*. Poster accepted to the Convention of the Society for Personality and Social Psychology [Virtual].

Wu, R., Sparrow-Mungal, T., Werner, K. M., & Inzlicht, M. (2020). *The benefits of giving into temptation: Examining the relation between motivation and (dys)functional self-licensing during goal pursuit*. Poster accepted to the Science of Motivation Preconference at the Annual Convention of the Association for Psychological Science, Chicago, IL. (Conference cancelled)

Wu, R., Sparrow-Mungal, T., Werner, K. M., & Inzlicht, M. (2020). *Knowledge and luck: A registered replication report of Turri Buckwalter, and Blouw (2015)*. Poster accepted to the Annual Convention of the Association for Psychological Science, Chicago, IL. (Conference cancelled)

Wu, R., Werner, K. M., & Inzlicht, M. (2020) *The benefits of giving into temptation: Examining motivation and (dys)functional self-licensing*. Talk accepted to the Annual Convention of the Canadian Psychological Association: Social and Personality Psychology Section, Montreal, QC. (Conference cancelled)

***Wu, R. & *Tsagris, D.** (2018). *A review: The effects of smartphones on attention and learning*. Poster presented at the Scientific Communication Poster Session at University of Toronto Scarborough, Toronto, ON. *Coauthors

Facilitated Workshops

Undergraduate research in psychology. UTSC First Year Learning Communities. November 18, 2020.

Managing distractions: Increasing perceptual (but not cognitive) load. UTSC First Year Learning Communities. October 20, 2020.

The use of willpower (or lack thereof), control strategies, and error detection for studying. UTSC First Year Learning Communities. Sept 29, 2020.

Extracurricular Activities

First Year Learning Communities Leader Department of Student Life (Psychological and Health Sciences Section) University of Toronto Scarborough	2020-present
Planning Committee Psychology and Neuroscience Departmental Association University of Toronto Scarborough	2020
Mentor Psychological Health Society University of Toronto Scarborough	2019

Memberships

Society for Social and Personality Psychology
Association for Psychological Science
Psi Chi, Psychology International Honor Society
Canadian Psychological Association

Transcript for Graduate Application Dec 2020

Registration History

2016 Fall – 2021 Winter: University of Toronto Scarborough

2019 Summer – Dean's List

2020 Fall – Dean's List

2016 FALL – HONOURS BACHELOR OF ARTS

Sessional GPA: 3.20 CUMULATIVE GPA: 3.20

CRS CODE	TITLE	WGT	MRK	GRG	CRS AVG
ASTA01H3	Introduction to Astronomy and Astrophysics I: The Sun and Planets	0.50	69	C+	C
CLAA05H3	Ancient Mythology I: Mesopotamia and Egypt	0.50	76	B	B-
POLA01H3	Critical Issues in Politics I: Migration, Membership, and Identity	0.50	83	A-	C+
PSYA01H3	Introductory Psychology: Part I	0.50	77	B+	C+
SOCA01H3	Introduction to Sociology I	0.50	80	A-	C+

Credits earned: 2.50

2017 WINTER – HONOURS BACHELOR OF ARTS

Sessional GPA: 3.46 CUMULATIVE GPA: 3.33

CRS CODE	TITLE	WGT	MRK	GRG	CRS AVG
ANTA01H3	Introduction to Anthropology: Becoming Human	0.50	77	B+	C+
CLAA06H3	Ancient Mythology II: Greece and Rome	0.50	73	B	
POLA02H3	Critical Issues in Politics II: Revolutionary Change from Lenin to ISIS	0.50	94	A+	C+
PSYA02H3	Introductory Psychology: Part II	0.50	80	A-	B-
SOCA02H3	Introduction to Sociology II	0.50	77	B+	C+

Credits earned: 2.50

2017 FALL – HONOURS BACHELOR OF ARTS

Sessional GPA: 3.74 CUMULATIVE GPA: 3.47

CRS CODE	TITLE	WGT	MRK	GRG	CRS AVG
POLB72H3	Introduction to Political Theory	0.50	80	A-	B-
POLB80H3	Introduction to International Relations I	0.50	80	A-	C+
POLB92H3	Comparative Politics: Revolution, Democracy, and Authoritarianism	0.50	78	B+	C+
PSYB10H3	Introduction to Social Psychology	0.50	89	A	C+
PSYB32H3	Abnormal Psychology	0.50	86	A	B-

Credits earned: 2.50

2018 WINTER – HONOURS BACHELOR OF ARTS

Sessional GPA: 3.42 CUMULATIVE GPA: 3.46

CRS CODE	TITLE	WGT	MRK	GRG	CRS AVG
POLB81H3	Introduction to International Relations II	0.50	80	A-	C+
PSYB04H3	Foundations in Psychological Research	0.50	72	B-	C
PSYB45H3	Behaviour Modification: Origins and Applications	0.50	75	B	B-
PSYB51H3	Perception and Cognition	0.50	88	A	C
STAB23H3	Introduction to Statistics for the Social Sciences	0.50	80	A-	C

Credits earned: 2.50

2018 SUMMER – HONOURS BACHELOR OF ARTS

Sessional GPA: 3.35 CUMULATIVE GPA: 3.45

CRS CODE	TITLE	WGT	MRK	GRG	CRS AVG
LINA01H3	Introduction to Linguistics	0.50	76	B	B
PSYB64H3	Introduction to Physiological Psychology	0.50	80	A-	C+

Credits earned: 1.00

2018 FALL – HONOURS BACHELOR OF ARTS

Sessional GPA: 3.60 CUMULATIVE GPA: 3.47

CRS CODE	TITLE	WGT	MRK	GRG	CRS AVG
PSYB55H3	Introduction to Cognitive Neuroscience	0.50	83	A-	C+
PSYB57H3	Introduction to Cognitive Psychology	0.50	79	B+	C+
PSYC02H3	Scientific Communication in Psychology	0.50	88	A	B+
PSYC16H3	Psychology of Imagination	0.50	76	B	C+
PSYC85H3	History of Psychology	0.50	85	A	C+

Credits earned: 2.50

2019 WINTER – HONOURS BACHELOR OF ARTS

Sessional GPA: 3.66 CUMULATIVE GPA: 3.50

CRS CODE	TITLE	WGT	MRK	GRG	CRS AVG
PSYC04H3	Brain Imaging Laboratory	0.50	87	A	A-
PSYC08H3	Advanced Data Analysis in Psychology	0.50	77	B+	C+
PSYC11H3	Social Psychology Laboratory	0.50	86	A	B-
PSYC31H3	Clinical Neuropsychology	0.50	76	B	B-
PSTC62H3	Drugs and the Brain	0.50	86	A	B-

Credits earned: 2.50

2019 SUMMER – HONOURS BACHELOR OF ARTS

Sessional GPA: 4.00 CUMULATIVE GPA: 3.53

CRS CODE	TITLE	WGT	MRK	GRG	CRS AVG
PSYB30H3	Introduction to Personality	0.50	86	A	B-
PSYC14H3	Cross-Cultural Psychology	0.50	89	A	C+

Credits earned: 1.00

2019 FALL – HONOURS BACHELOR OF SCIENCE

Sessional GPA: 4.00 CUMULATIVE GPA: 3.57

CRS CODE	TITLE	WGT	MRK	GRG	CRS AVG
BIOA11H3	Introduction to Human Biology	0.50	92	A+	B-
PSYC10H3	Judgement and Decision Making	0.50	92	A+	B
PSYC90	Supervised Study in Psychology: Replicating Social Psychology	0.50		IPR	
PSYC14H3	Psychology of Morality	0.50	92	A+	B+

Credits earned: 1.50

2020 WINTER – HONOURS BACHELOR OF SCIENCE

Sessional GPA: 4.00 CUMULATIVE GPA: 3.61

CRS CODE	TITLE	WGT	MRK	GRG	CRS AVG
PSYC19H3	Psychology of Self-Control	0.50	98	A+	B
PSYC70H3	Advanced Research Methods Laboratory	0.50	90	A+	B
PSYC90H3	Supervised Study in Psychology: Replicating Social Psychology	0.50	94	A+	
PSYD66H3	Current Topics in Human Brain and Behaviour	0.50	90	A+	B+

Credits earned: 2.00

2020 FALL – HONOURS BACHELOR OF SCIENCE

CRS CODE	TITLE	WGT	MRK	GRG	CRS AVG
PSYB20H3	Introduction to Developmental Psychology	0.50		IPR	
PSYC51H3	Cognitive Neuroscience of Vision	0.50		IPR	
PSYC52H3	Cognitive Neuroscience of Attention	0.50		IPR	
PSYD98Y3	Thesis in Psychology: The Psychology of Self-Control	1.00		IPR	

Credits earned: 0.00

2021 WINTER – HONOURS BACHELOR OF SCIENCE

CRS CODE	TITLE	WGT	MRK	GRG	CRS AVG
PSYC18H3	The Psychology of Emotion	0.50		IPR	
PSYC23H3	Developmental Psychobiology	0.50		IPR	
PSYC35H3	Advanced Personality Psychology	0.50		IPR	
PSYD98Y3	Thesis in Psychology: The Psychology of Self-Control	1.00		IPR	

Credits earned: 0.00

University of Toronto Guide to Transcript

Grade Meaning	Undergraduate Grade Scale		Grade Point Value
	Refined Letter Grade Scale	Numerical Scale of Marks	
Excellent	A+	90 – 100%	4.0
	A	85 – 89%	4.0
	A-	80 – 84%	3.7
Good	B+	77 – 79%	3.3
	B	73 – 76%	3.0
	B-	70-72%	2.7
Adequate	C+	67 – 69%	2.3
	C	63 – 66%	2.0
	C-	60 – 62%	1.7
Marginal	D+	57 – 59%	1.3
	D	53 – 56%	1.0
	D-	50 – 52%	0.7
Inadequate	F	0 – 49%	0.0

IPR In progress.

(IPR will also appear if the course has not yet started or the course has finished but an approved grade is not yet available.)

Academic Sessions:

Fall Session (September – December)

Winter Session (January – April)

Summer Session (May – August)