Do I have enough?

On the act of assessing one's personal resources

Do I have enough?

On the act of assessing one's personal resources

Gró Einarsdóttir

Doctoral Dissertation in Psychology
Department of Psychology
University of Gothenburg
15 June 2018

Cover layout: Hilmar Þorsteinn Hilmarsson
Printing: BrandFactory, Kållered, 2018
ISBN: 978-91-7833-059-1 (Print)
ISBN: 978-91-7833-060-7 (PDF)
ISSN: 1101-718X Avhandling/Göteborgs universitet, Psykologiska inst.
Internet link to Gupea: http://hdl.handle.net/2077/56220

Dedicated to my mamma Steinunn and my pabbi Einar
for giving me the resources necessary to go on this journey.

Abstract

How do people assess their personal resources? This is a fundamental question, since awareness of your current resources is a prerequisite for mobilizing your efforts to secure, sustain, and safeguard resources in the best way possible. However, answering this question requires an understanding of how people evaluate whether they have too little, just enough, or more than enough. I subscribe to the view that being in a state of scarcity, sufficiency, or abundance is the result of a comparative judgment between the resources a person feels in control of and a relevant comparison standard. This theoretical assumption was tested empirically in three studies approaching the subject from different theoretical standpoints, using different methodologies and analysis procedures. In Study I, my colleagues and I evaluated the extent to which reference points influenced the content validity of a newly developed instrument, the Relative Resource Assessment Scale (RRAS). This scale is a generalized measure of personal resources that asks people to use different reference points to evaluate their resources. In Study II, we estimated the influence of different referents on how well the RRAS predicted participants' future outlook. In Study III, we examined whether growing up poor led to individual differences in susceptibility to context effects when ascribing value to different products. Studies I and II revealed that the RRAS measures three distinct but correlated resource factors that we labeled economic, temporal, and socio-emotional resources. Study I also verified that referents influence the assessment of resources, especially economic resources. Study II demonstrated that knowledge about how individuals assess resources in comparison to the past and to other people is useful when predicting future outlook. Finally, although we found little evidence that economic resources in childhood influence susceptibility to contextual cues, we did manage to replicate previous findings demonstrating that contextual cues have a robust impact on resource assessments. Given our findings, it is interesting that referents are often ignored when personal resources are measured. Further, although personal resources are a central concept in psychological research, the field currently lacks an agreed-on measurement. In this thesis, I have tried to conceptualize and measure personal resource assessments. Although these measurements require further development, this thesis highlights that the field is in need of a better measurement method. I believe that a systematic endeavor, preferably following in the footsteps of personality research where a lexical approach was used to create the influential Big Five taxonomy, has the potential to change a straggling field into a vitalized hotbed for accumulating knowledge.

Swedish summary

Bakgrund och övergripande syfte

Hur bedömer människor sina personliga resurser? Detta är en fundamental fråga eftersom kännedom om mängden tillgängliga resurser är en förutsättning för att människor ska kunna införskaffa, upprätthålla och skydda resurser. För att kunna besvara frågan krävs kunskap om hur människor bedömer att de har för lite, tillräckligt, eller mer än nog. I avhandlingen utgår jag ifrån att människor upplever antingen brist, tillräcklighet, eller överflöd som en konsekvens av en jämförelse mellan de resurser en tycker sig ha kontroll över och den referenspunkt som i en given situation bedöms medvetet eller omedvetet vara relevant. Det övergripande syftet med denna avhandling har varit att studera olika aspekter av hur människor bedömer sina personliga resurser. De tre empiriska studierna som presenteras behandlar detta syfte från olika teoretiska synvinklar, med varierande metodologi och analysprocedurer.

Studie I

Syftet med Studie I var att utvärdera innehållsvaliditeten hos en skala som jag och mina kollegor utvecklade för att mäta relativa resursbedömningar. Skalan har fått namnet Relative Resources Assessment Scale (RRAS). Denna skala användes i tre enkäter. Samma grundläggande metod användes i alla enkäter, även om det fanns en viss variation i innehållet mellan enkäterna. Den generella metoden var att deltagare ombads bedöma sina ekonomiska, tidsmässiga, sociala och emotionella resurser i jämförelse med en referenspunkt. Referenspunkterna kunde vara (i) vad en vill ha, (ii) vad en behöver ha, (iii) vad en har haft tidigare, (iv) vad en kommer ha i framtiden, eller (v) vad andra människor har. Enkät 1 (N=611) och enkät 3 (N=756) besvarades av ett representativt stickprov från den isländska populationen. Enkät 2 (N = 1045) besvarades av ett brett urval från Sverige. Vi använde svaren för att analysera mätinstrumentets konvergerande samt diskriminerande validitet. Testet av konvergerande validitet var inriktat på i vilken utsträckning våra frågor mätte de fyra resurserna som de var avsedda att mäta. Testet av diskriminerande validiteten riktade sig mot att utvärdera i fall de fyra resurserna skiljde sig från varandra. Slutligen utvärderade vi i vilken utsträckning referenspunkterna påverkade deltagarnas svar.

Studie II

Syftet med Studie II var en vidare validering av RRAS, detta genom att demonstrera relevant prediktiv validitet. Individer som har tillgång till ett stort resursförråd har anledning till att vara optimistiska inför framtiden eftersom de kan vila i vetskapen om att deras resurser kan användas för att möta livets utmaningar. För att validera RRAS ville vi därför demonstrera att detta mått kunde användas för att förutsäga deltagarnas syn på framtiden. Vidare ville vi undersöka i vilken utsträckning referenspunkterna bidrog till att förbättra denna förutsägelse. I Studie II använde vi enkätsvaren från enkät 1 som beskrevs ovan. Vi analyserade svaren med hjälp av en regression där relativa resursbedömningar, kontrollerat för bakgrundsvariabler, användes för att predicera deltagarnas optimism och oro inför framtiden.

Studie III

Syftet med Studie III var att undersöka i vilken utsträckning ekonomiska uppväxtförhållanden kan påverka ekonomiska resursbedömningar senare i livet. Den teoretiska utgångspunkten var att personer som växer upp i relativ fattigdom utvecklar och tar med sig färdigheter som är nödvändiga för att hantera ekonomiska resurser som exempelvis pengar. Mina kollegor och jag föreslog att en stabil uppfattning av hur mycket produkter är värda är en viktig färdighet, detta eftersom en sådan förmåga kan skydda människor från att manipuleras av yttre påtryckningar. Till exempel förväntade vi oss att personer som växte upp under knappa förhållanden har en stabil preferens för hur mycket de är villiga att betala för en vardaglig produkt som exempelvis en öl, oavsett om den kommer från ett hotell eller från en livsmedelsaffär. I kontrast förväntade vi oss att de som hade det gott ställt i barndomen skulle vara villiga att betala mer för samma sorts öl om den kom från ett hotell än om den var köpt i en livsmedelsaffär. För att undersöka denna hypotes genomförde vi en stor experimentell enkät (N = 1442). Vi använde oss av experimentella paradigm som har tidigare använts för att demonstrera kontextuell påverkan på resursbedömningar. I denna studie pre-registrerade vi våra hypoteser, metoder, och statistiska analyser innan studien genomfördes. Dessutom genomgick studien kollegial granskning innan data samlades in. I enlighet med vår plan genomförde vi sedan regressionsanalyser där vi undersökte interaktionen mellan våra experimentella manipulationer och ekonomiska förhållanden i barndomen, kontrollerat för nuvarande ekonomiska förhållanden. Vi testade också

replikerbarheten hos tidigare fynd som har demonstrerat påverkan av kontextuella faktorer och nuvarande ekonomi på resursbedömningar.

Slutsatser och framtida forskning

Resultaten från Studie I och II visade att RRAS skalan mäter tre distinkta men relaterade resursfaktorer som vi döpte till ekonomiska, temporala, och socio-emotionella resurser. Vidare verifierade Studie I att referenspunkter påverkade bedömningen av resurser, särskilt när ekonomiska resurser bedömdes. Studie II demonstrerade att bedömd resursbrist grundad på jämförelser med det förflutna (jag hade mer förr) och andra människor (andra har mer än jag), predicerar en pessimistisk syn på framtiden. Slutligen, även om vi i Studie III fick svagt stöd för att ekonomiska uppväxtförhållanden kan påverka hur mottagliga människor är för kontextuell påverkan, lyckades vi replikera tidigare fynd som visar att kontexten har en robust inverkan på människors resursbedömningar. Dock gav våra data ett betydligt svagare stöd för en interaktion mellan nuvarande ekonomiska förhållanden och påverkan av kontextuella faktorer än tidigare forskning har visat.

Eftersom alla våra studier på ett eller annat sätt demonstrerar referenspunkters inverkan på resursbedömningar är det en intressant anmärkning att jämförelser mot referenspunkter vanligen ignoreras när personliga resurser mäts. Även om personliga resurser är ett centralt begrepp inom psykologisk forskning saknar fältet för närvarande ett mätinstrument som forskare kan enas kring. I denna avhandling har jag gjort ett försök att konceptualisera och mäta personliga resursbedömningar. Även om måtten som presenteras i denna avhandling behöver vidareutvecklas tror jag att denna avhandling lyfter fram behovet av bättre mått inom fältet. Jag anser att ett mer systematiskt arbete behövs för att forskare inom fältet ska kunna börja dra åt samma håll. Företrädesvis kan en sådan utveckling följa i fotspåren på forskningen om personlighetpsykologi där man genom att följa en lexikalisk hypotes lyckades skapa den inflytelserika Big-Five taxonomin. Den lexikaliska hypotesen antar att om en entitet är viktig för en grupp människor så blir den till slut en del av språket. Särskilt viktiga entiteter antas således förekomma i språket som ord. Baserat på ett liknande synsätt skulle forskare kunna identifiera en lista över de ord som används för att beskriva en resurs. Även om listan förmodligen kan göras lång är fördelen med detta tillvägagångssätt att listan har ett slut. En sådan uttömmande ordlista kunde sedan reduceras ner till en taxonomi över övergripande och generellt viktiga personliga resurser. Jag anser att detta tillvägagångssätt har potential att ge en grogrund för att samla kunskap och därigenom vitalisera ett splittrat forskningsfält.

Preface

This thesis consists of an introductory chapter and the following three articles, which are referred to in the text by their Roman numerals:

I Einarsdóttir, G., Hansla, A., & Johansson, L.-O. (2018a). The convergent and discriminant validity of the Relative Resource Assessment Scale. *Unpublished manuscript.*

II Einarsdóttir, G., Hansla, A., & Johansson, L.-O. (2018b). Looking back in order to predict the future: Relative resource assessments and their relationship to future expectations. *Nordic Psychology*. Advance online publication. doi: 10.1080/19012276.2018.1457452

III Einarsdóttir, G., Hansla, A., & Johansson, L.-O. (2018c). The value of money: On how childhood economic resources influence value assessments later in life. *Comprehensive Results in Social Psychology*. doi: 10.1080/23743603.2018.1465804

Contents

Acknowledgements

Writing this thesis has been without a doubt my biggest professional and personal challenge. The work has required my skills, my thoughts, my time, and my patience. I began with little knowledge of how to conduct research, and I have made many mistakes throughout the process. Making mistakes has been one of the most powerful ways of learning that I have encountered, and has transformed me from a student into a scientist. However, learning through your mistakes is painful. I would not have been able to continue without the help of my abundant social resources.

First and foremost, I would like to thank my supervisors, who have been genuinely and boundlessly supportive throughout this whole process. The time, effort, and backing that they have given me has reached far beyond their job description, and for that I am truly grateful. Without the creative force and drive of my head supervisor, Docent Lars-Olof Johansson, this thesis would never have existed. Discussions with you about ideas, science, and research have always been stimulating, interesting, and thought-expanding. I am thankful for your belief in me, your encouragement, and your gentle criticism. I am grateful that you have given me the freedom to follow my interests. You have respected my initiative, and you have valued my input. I am also lucky to have had the help of my co-supervisor, Dr André Hansla. At the times when I lost faith in this work, yours was always unwavering. Your kindness, analytical eye, and contemplative ideas have made this work both easier and better.

I would also like to thank the other researchers who contributed to the content of this thesis. A big thank you to Professor Ali Kazemi who thoughtfully and carefully reviewed this thesis. I am certain that your comments helped me clarify and sharpen my theoretical thinking. Thank you to Professor Emeritus Tommy Gärling, who reviewed earlier drafts of this thesis. Your sharp eye for identifying logical fallacies pushed me further. I would also like to thank the other members of the research project within which this thesis was developed, Professor Sverker Molander and Dr Mathias Zannakis, for your intriguing discussions and comments on early versions of my manuscripts. I thank Dr Isak Barbopoulos for his input in the creation of the RRAS measurement instrument. I am also very grateful to Juliane Bücker for her help with double-checking some of my research reporting. A heartfelt thank you must go to Dr Rebecca Willén for introducing me to the Open

Science movement, which has been a great inspiration in my scientific development.

Thanks must also go to the many research communities which I have been a part of. Thank you to the Center for Collective Action Research (CeCAR) for your inspiring seminars and conferences which have gathered scientists from varied disciplines and key actors within the field to discuss the most important questions of our time. A special thank you to Sverker Jagers and Niklas Harring for your collaboration. I am lucky to have been part of two research groups within the department, SOC-JDM and EPU. Thanks for stimulating discussions about science and a supportive research climate go to Amelie Gamble, Anders Biel, Anders Carlander, André Hansla, Andreas Nilsson, Bodil Karlsson, Carl Martin Allwood, Cecilia Jakobsson Bergstad, Chris von Borgstede, Emma Bäck, Emma Ejelöv, Erika Ramos, Isak Barbopoulos, Lars-Olof Johansson, Magnus Bergquist, Martin Geisler, Martin Hedesström, Niklas Fransson, Patrik Michaelsson, and Sandra Buratti.

I am grateful to all the administrative support staff for making things run smoothly. I would like to thank the panel staff members of SSRI and LORE for their help with the data collection, especially Andrea G. Dofradóttir, Johan Martinsson, and Maria Andersson for their comments on the surveys and experiments presented in this thesis. I would also like to thank the very helpful administrative staff at the Department of Psychology. A special thank you to administrative manager Petra Löfgren, for your professional and kind help when I most needed it. Thank you to postgraduate studies officer Ann Backlund for your helpfulness and open-door policy.

I have thoroughly enjoyed working with the collaborators I have encountered through my work as a student representative, which gave me a greatly-appreciated escape from the solitude of the research chamber and a good chance to do something a bit more concrete. A special thank you goes to the other members of the presidium when I was head of the doctoral committee, Houman Sadri and Malin Podlevskikh Carlström. You were not only reliable and dedicated to the work, but also really fun to be around. Thank you to the coordinator for the university's work with refugees, Elizabet George, to the head of Göta, Ellinor Alvesson, and to the city of Gothenburg for their collaboration on launching the mentoring program between students and refugees. Thank you to the members of the working group for broadening recruitment at the central level, especially Helena Lindholm and Samuel Heimann who led the work. Thank you to all of the members of the doctoral council at the social science faculty level, to the members of the social science faculty board and the faculty staff, and to everyone who has invested their time and efforts at the Department of

Psychology. Thank you to Karin Boson, for encouraging me to get involved in this work. I am so happy to have met so many people who are looking for ways to improve the university.

Further, I would like to thank my many collaborators outside of the university. I want to express my deepest gratitude to the other members of the project team working on our exhibition about sustainable consumption at the National Museum of World Culture. Thank you to Lena Stammarnäs, Kristoffer Ekberg, Christine Palmgren, Mattias Kästel, Jenny Ringarp, and Klas Grinell. I have thoroughly enjoyed working with you. Our collaboration has been a source of inspiration, creativity, energy, and enjoyment. I have similarly been invigorated through the many encounters with the people I have met when lecturing outside of the university. Thank you to the people at the Gothenburg Center for Sustainable Development, the Universeum Science Centre, the County Administrative Board of Västra Götaland, the city of Gothenburg, and other networks and organizations.

Additionally, I would like to thank my colleagues at the Department of Psychology. You have lifted my spirits with your stimulating, funny, and nerdy conversations over "fika". I have especially enjoyed all of our many lunches that started with a casual mention of the events of the day and ended in a heated debate about conceptual validity. I am also reminded of the joyous times with those who have joined in on cultural explorations of everything from disappointing musicals to symphonic exuberance. A similar shout out goes to the "after-work" gang where all the world's problems are "solved" over a beer or two. Thank you for the opportunity to vent, gossip, and laugh at the absurdity of it all. You know who you are.

A very personal thank you goes to my room-mates for the greatest part of this graduate training, for all the interesting discussion and support: Bodil Karlsson, Magnus Bergquist, and Anders Carlander. You are all very dear friends, and I am very fortunate to have shared so much of my PhD experience with you. I would like to say a special thank you to dear Bodil, for always genuinely wanting the best for me and helping me get there. I cannot thank you enough.

Beyond the university, I have had a great support network of friends that have been invaluable through and through. Thank you to my friends from the Patricia ballet, especially Anneli and Frida. You have patiently listened to my complaints and relentlessly cheered me on throughout this whole process. You have not only been caring but also brought me great joy with your energy, enthusiasm, and inventiveness. Thinking of all of the fun things we have done brings a smile to my face. Thank you My, my kindred spirit, for helping me sweat it out with so much joy every Tuesday. Thank you to Staffan, for being caring, and helpful. Thanks to my childhood friends from

Iceland: Halla, Íris, Ásrún, Elísabet, Guðný & Guðrún Stella. Our bond is forever.

These acknowledgements would not be complete without thanking my dearest family. I am so grateful for the foundation that my parents have provided me with. This thesis is dedicated to my mamma, Steinunn, who has without question loved me unconditionally. She has taught me the value of pursuing things that are inherently meaningful and trying to contribute to society at large. She has shown me through her own actions how one person can make a difference for the better. This thesis is also dedicated to my pabbi, Einar, who has always believed in my abilities and supported me with words and concrete actions in following my dreams. I would also like to thank my late grandmother, Bjarnfríður, who believed in the value of education and prided herself in the fact that all of her descendants received a good one. Thank you to my oldest sister, Arna, who not only cheers me on but inspires me with her own grit, competence, and humor. Thank you to my other sister, Vera, for your understanding and compassion, and for wanting me to be close to home. Thank you to my brothers-in-law, Himmi and Stjáni, who bring good cheer to the family and are great fathers to my beloved nieces and nephews.

Finally, thanks go to my love, Kári, who entered my life only recently but who I nonetheless feel like I have known forever. You met me at probably the most stressful time in my life, yet your presence has not only made this period bearable but has given me some of the most precious and best moments I can remember. Although much is uncertain as I enter into a new chapter in my life, I feel safe knowing that you will be there with me. You have helped me find my roots and my home, and they are with you.

Introduction

"Judge a man by his questions rather than by his answers."
— Voltaire

How do people assess the value of their personal resources? The answer to this question provides fundamental insights into how individuals survive and thrive. A basic premise is that people with large resource reservoirs are better prepared to deal with the varied challenges they may face, and have a better chance of satisfying their own needs.

The work in this thesis was informed by the propositions put forth in the theory of conservation of resources (COR) (Hobfoll, 1989, 2001, 2002). COR is an influential theory, as reflected in the fact that at the time of writing, according to Google Scholar its originator has been cited almost 40 000 times. Given that the theory manages to integrate varied findings from psychology into a single framework, this appeal is not surprising. Further, its subject matter is the basics of the human motivational system, and it can therefore be used to explore and explain a multitude of reactions involving cognition, emotion, or behavior.

The theory consists of two basic principles, from which four corollaries follow (Hobfoll, 2001). The first principle, that losses loom larger than gains, has been confirmed in multiple studies demonstrating that people tend to be loss averse (Thaler, Tversky, Kahneman, & Schwartz, 1997; Tom, Fox, Trepel, & Poldrack, 2007; Tversky & Kahneman, 1991). The second principle is that in order to secure, sustain, and safeguard resources, individuals are forced to invest other resources. For example, in order to receive a salary, people must invest their energy, time, and knowledge. From this principle the first corollary is derived, which states that having resources facilitates further gains, while lacking resources makes people vulnerable to further losses. The second corollary posits that after losing one resource, more losses tend to follow. The reason for this is that when you lose one resource, you compensate for that loss using other resources, and these may in turn become depleted. The third corollary is a mirror image of the second, stating that when you gain one resource it is easier to obtain further resources. The obtained resource can be used to invest in more resources, which can again be used to obtain even more. What the second and the third corollary emphasize is that resources are highly interrelated, which in turn means that a change in resource control can easily contribute to either

downward spirals or upward spirals. Fourth, since losses are experienced more intensely than gains, the final corollary presupposes that individuals who lack resources become defensive of their remaining resources.

Taken together, these basic principles help to explain the basic human motivation to desire resources. However, a prerequisite to effectively securing, sustaining, and safeguarding resources is knowledge about which resources are scarce, sufficient, or abundant. An awareness of one's own personal resources can help individuals to mobilize coping strategies in an adequate way (Folkman, Lazarus, Gruen, & DeLongis, 1986; French, Rodgers, & Cobb, 1974; Lazarus & Folkman, 1984). Without some knowledge about whether you control too few, sufficient, or more than enough resources, allocation decisions and strategic responses are shots in the dark.

With that being said, asking people to provide a definitive answer to how much personal resources they have, and verifying this answer, is surprisingly difficult, as it requires an understanding of how people come to such a conclusion. At the outset of this research I began to break down this broad and general question into smaller components, and this process is still ongoing. In my quest, I gradually realized what questions to ask in order to come closer to finding an answer. What defines a personal resource? How do people decide if their resources are scarce, sufficient, or abundant? What determines wants? How do reference points influence resource assessments? How does personal experience influence our resource assessments? How do societal experiences influence resource assessments? What are the consequences of resource assessments? How can resource assessments be measured?

The introductory chapter to this thesis explains why these questions need to be asked, in order to begin answering the general question. These questions are the result of an iterative process of going back and forth between theoretical insights and the empirical work presented in this thesis.

This thesis is divided into three parts. In the first section I provide a motivation for the questions asked above. In the second section I present a short summary of the empirical work of the thesis. In the third section I provide a general discussion of the questions answered by the empirical work and the questions still remaining.

What defines a personal resource?

Any exploration of how individuals evaluate personal resources must start with a definition of what personal resources are. The term "resource" is often used carelessly, and a large number of psychological phenomena are

classified as resources without explicitly motivating what warrants this label. This lack of clarity hinders the integration of different research findings. Even when explicit definitions are provided, they can be so broad that empirical work is made impossible, removing resource studies from the realm of science. For example, Freese and Burke (1994) state that resources are: "Anything that functions to sustain a system of interaction whether or not it is valued, scarce, consumable, possessible, negotiable, leverageable, tangible or even cognizable. This admits almost anything to the category" (p. 9). In all fairness, however, this definition does represent the extreme, and most other definitions are more specific.

In order for a definition of resources to be useful as well as valid, it needs to introduce boundaries while at the same time being broad enough to encompass the vast number of entities that the concept refers to. One potential way to satisfy both criteria is to use the ability of an entity to satisfy needs as a defining feature. For example, Daoud (2018) puts forth the view that resources are those entities that are able to satisfy wants, either directly or indirectly by being exchangeable for direct satisfiers. Inherent value has also been used as the defining feature. In particular, Hobfoll (2002), the theorist behind COR, defined resources as "those entities that are either valued on their own, or ease the attainment of other valued ends" (p. 307). The same sentiment is echoed by Diner and Fujita (1995), who state that resources are "Those objects, personal characteristics, conditions, or energies that are valued in their own right or are valued because they act as conduits to the achievement or protection of valued resources" (p. 927).

Definitions that use wants or inherent value as defining features do not necessarily contradict one another, but can rather be viewed as different ways of saying the same thing. This is because it is highly likely that resources are considered valuable because of their ability to directly or indirectly satisfy wants. In fact, this point has been emphasized by Hobfoll (2001) himself. Be that as it may, what both definitions also share is the risk of becoming a tautology. Resources are something inherently valued, and something is inherently valued because it is a resource. A resource is something that can satisfy wants, and it is able to satisfy wants because it is a resource (see Halbesleben, Neveu, Paustian-Underdahl, & Westman, 2014 for a similar reasoning).

Thus, although I agree with both definitions, and consider resources to be those entities that are valued because they enable us to satisfy wants, or because they assist in the attainment of entities that can indirectly satisfy wants, I would like to add two additional qualifiers to the definition of resources. First, I agree with Hobfoll's (2001) specification that only entities that are generally seen as resources amongst individuals who share the same

cultural tradition can qualify as a resource. Second, I use the qualifier "personal" resource in order to emphasize that I have chosen to focus only on those resources that an individual feels in personal control of. Thus, resources that are felt to be primarily under the control of others are out of bounds for this thesis. Similarly, at a given point in time, I view a personal resource as something that is at the disposal of the individual in a general sense, and is not tied to a specific context, institution, or an organization. I believe that these stipulations serve as necessary boundaries that facilitate the accumulation of knowledge as well as disconfirmation and criticism (Cook, Campbell, & Shadish, 2002).

Are your resources scarce, sufficient, or abundant?

Although much is gained by clarifying what is meant by personal resources, the main research focus of this thesis is to understand how people conclude that they have scarce, sufficient, or abundant resources, and what consequences such resource evaluations may have. Perhaps more than what type of resource is available, the answer to this question determines our reaction. For example, imagine that you receive 100 dollars, but you are agnostic regarding whether this is too little, abundant, or sufficient money. How would you react? Would you feel alert or indifferent? Would you be inclined to spend it or save it? Would you feel concerned or optimistic about the future? If you are unaware of whether you are in a state of scarcity, sufficiency, or abundance, attempts to answer these questions become somewhat absurd. The same applies to different types of resource.

In line with this point, Mullainathan and Shafir (2013) draw on cutting-edge psychological research to demonstrate that experiencing scarcity creates certain predictable psychological responses. Although having too little time, money, or food may seem like unrelated problems, people nonetheless show the same pattern of responses. This reactive pattern is believed to be caused by the mindset that scarcity creates. More specifically, in an experimental series, Shah, Mullainathan, and Shafir (2012) found that scarcity changed how people allocate attention, by increasing focus on the pressing problem of scarcity and heightening performance in the present. The cost of this increased focus, however, is a tunnel vision that can lead people to neglect the long-term consequences of the current actions. This reaction pattern occurred regardless of what resource was studied.

According to Mullainathan and Shafir (2013), this scarcity mindset can be created simply by having less than you think you need. This means that people do not necessarily have different reactions to having too little food

and having too few diamonds, as long as they perceive the same level of scarcity.

Recent theoretical work in economic sociology provides more detailed answers to how feelings of scarcity, abundance, and sufficiency (SAS) are created. The unified SAS framework postulates that instead of being three separate phenomena, the three states belong to the same ontological entity of resource control (Daoud, 2018). According to this approach, scarcity arises when an agent controls "insufficient direct satisfiers to satisfy his or her wants; or, when the agent controls insufficient indirect satisfiers to exchange or produce satisfiers. A combination of these two situations also qualifies a case of scarcity" (Daoud, 2018, p. 211). Following the same logic, abundance occurs when personal satisfiers succeed the individual's wants, and sufficiency occurs when the individual's wants and satisfiers are in equilibrium.

This definition highlights that being in a state of scarcity, sufficiency, or abundance is relational, and that a limited resource is not by default also a scarce resource. If there is no desire, then there is no scarcity. If there are limited amounts of diamonds in the world, but no one wants them, we cannot say that diamonds are lacking. Thus, determining whether an individual is experiencing one of the three states of resource control requires knowledge about both wants and resources.

A second fundamental claim of the SAS framework is that the combination of a want and control over indirect and direct satisfiers of that want necessarily leads to one of the three states of resource control: scarcity, sufficiency, or abundance (Daoud, 2018). The theory postulates that these three states represent the entire range of possible outcomes, so that an actor is always experiencing either scarcity, sufficiency, or abundance for any given want. As people can have multiple wants, the same individual can simultaneously occupy a multitude of resource control states. In line with Mullainathan and Shafir, according to the unified SAS framework no difference is expected between experiencing scarcity due to lack of direct satisfiers or indirect satisfiers in comparison to wants (Daoud, 2018).

What determines wants?

According to the neo-classical theory of economics, wants are insatiable and limitless (Turner & Rojek, 2001). This assumption can be called into question by the numerous examples of people voluntarily choosing to limit their wants, as is at the core of the Buddhist religion (Nyanaponika, 2014) and other philosophies of voluntary simplicity (Etzioni, 1998). However, these empirical findings fit well within the theoretical framework of SAS

highlighted above (Daoud, 2018), which stresses that neither wants nor resources should be taken as given. I agree with this point, and believe that any empirical scrutiny of assessment of personal resources must study both resources and wants in order to understand the different states of resource control.

Be that as it may, although wants cannot be assumed to be limitless, they are nonetheless plenty and diverse. Individuals can want both material and immaterial resources. Wants can be seen as the desire or motivation to obtain a resource; they are thus directed towards a certain object, and are not a generalized feeling of motivation (Hofmann & Van Dillen, 2012). This desire to obtain a resource can be biological, sociological, and/or psychological.

It is worth noting that while some make the distinctions that needs are absolute and wants are relative desires that go beyond eating, sleeping, and reproducing, others use the terms interchangeably, viewing wants as something that can be directed towards maintaining our biological system (Veenhoven, 1995), can be socially constructed (Veblen, 2007), or are psychological in nature (Baumeister & Leary, 1995). Further, other scholars have chosen to use the terms "wishes" (Stangl, 1993) or "desires" (Hofmann & Van Dillen, 2012) to refer to similar entities. As of now, I see more similarities than differences between theories and findings that use the terms "higher-order needs", "wants", "desires", and "wishes". However, I also acknowledge that there may be subtle differences between the concepts that are worth empirically testing.

In any case, unlike the theoretical boundaries that COR theory draws for resources (Hobfoll, 2001), the urge to obtain something can be considered a want even without a shared cultural understanding of this desire. Wants reside within the individual, and this is not compatible with viewing them as being necessarily based on a cultural consensus. However, this lack of theoretical boundaries creates difficulties for empirical studies. Need theories have been criticized for using circular reasoning, where anything that contributes to well-being can be considered a need (or a want), while these needs in turn produce well-being when they are satisfied (Diener & Lucas, 2000). Theories aiming at a more objective approach by attempting to create an exhaustive list of universal needs have also been sharply criticized, and such lists have gained limited empirical support (Barling, 1977; Lawler & Suttle, 1972; Wahba & Bridwell, 1976).

The empirical work presented in this thesis attempts to address some of the issues raised in this section. Instead of assuming that wants are limitless, we have asked whether people feel that their resources meet their wants. Instead of assuming that wants and needs are interchangeable constructs, we have measured both. Further, in line with the work of Diener and Lucas

(2000), we have measured people's perceptions of need fulfillment instead of simply inferring that more resources equal more satisfaction. Finally, for those worried that higher-order needs and wants are circular concepts, we have also tried to approximate these wants by studying other referents that people may use to evaluate whether their resources are scarce, sufficient, or abundant.

How do reference points influence resource assessments?

As previously outlined, I view scarcity, sufficiency, and abundance as outcomes of the discrepancy between wants and resources. Although attempts have been made to empirically evaluate wants and needs, the issues listed above highlight why this is often difficult. One approach is to take responses at face value and simply ask people what they feel that they want, need, or desire. However, people may not be fully aware of their wants and desires. For example, the research on preference reversals shows that people's answers to what they want can be reversed simply by framing the question and alternatives in a different way (Tversky, Slovic, & Kahneman, 1990). Further, the idiosyncratic nature of wants makes them difficult to measure empirically.

Another way to both conceptualize and measure people's perceptions of scarcity, sufficiency, and abundance is to view each state of resource control as the discrepancy between a resource and a salient comparison standard. Although this definition is a better fit for empirical study, we still need to specify which comparison standard people use to assess their resources. According to evaluation theory (Diener & Lucas, 2000), the choice of referent is not random, but rather particular. The theory integrates different perspectives to explain subjective well-being, and concludes that people use self-relevant information to evaluate their current circumstances, which in turn determines their well-being. The theory postulates that the most salient referent has the greatest impact on well-being. In my view, these comparison standards can be seen as approximators of wants. The advantage of studying approximators of wants, instead of wants directly, is that these referents tend to be more specific and defined than wants generally are. The question remains, however: which comparison standards are likely to be salient?

For more than 60 years now, sociologists, psychologists, and social psychologists have studied reactions to feelings of relative deprivation. Such reactions are a response to comparative judgments using different referents. The major challenge of the field has been to determine what referent people choose when assessing their resources (Walker & Pettigrew, 1984). Although many referents have been studied and proposed, typically the research has

focused on how social and/or temporal comparisons determine feelings of deprivation (Walker & Smith, 2002). More specifically, if individuals feel that they have less compared to others, or less now than in comparison to other points in time, they are likely to feel deprived.

Most research on relative deprivation has focused on the use of social comparisons. According to social comparison theory (Festinger, 1954), people have a natural tendency to use social comparisons when objective standards are lacking. Social comparisons have been suggested to be the central standard for evaluating how well-off one is. If such evaluations lead to a feeling of being better off than others, this will in turn lead to well-being. A meta-analysis on relative deprivation research found a clear association between feeling worse off in comparison to others and resentment (Smith, Pettigrew, Pippin, & Bialosiewicz, 2012). Further, social comparisons have been found to be especially important for judgments of life satisfaction (Cheung & Lucas, 2016; Frieswijk, Buunk, Steverink, & Slaets, 2004).

Although most research on relative deprivation has focused on social comparison, researchers have also found that negative temporal comparisons commonly lead to frustration (Crosby, 1976; Runciman, 1966; Walker & Pettigrew, 1984). Accordingly, prospect theory emphasizes the importance of referring to what people are accustomed to in the absence of explicit reference points (Kahneman & Tversky, 1979). Similarly, temporal comparison theory postulates that when the present is unstable and unfamiliar, people may turn to temporal comparisons for a more reliable metric (Albert, 1977).

The empirical work in this thesis shares many similarities with research on relative deprivation, but there are some distinct differences. In order to identify a case of relative deprivation, three features should be observed among the deprived. First, an individual must make a comparative judgment. Second, this comparison must lead to the conclusion that the individual or the individual's group is at a disadvantage. Finally, this must be perceived as unfair (Smith et al., 2012). As the reader may observe, the theoretical stance of this research overlaps with the first feature of relative deprivation. However, I have not assumed that comparative judgments necessarily lead individuals to feel that they are in a disadvantageous position, nor that this position is perceived as unfair. Since relative deprivation research has been criticized for not living up to its promise, as findings are often weak and inconsistent (Brush, 1996; Finkel & Rule, 1986; Gurney & Tierney, 1982), I believe that a careful look at each of the features of relative deprivation is motivated. The research in this thesis is aimed toward a better and more systematic understanding of the first feature of relative deprivation, namely

the process of assessing one's resources and the multitude of reactions that such assessments may give rise to.

How does personal experience impact resource assessments?

Research on relative deprivation, like research on judgment and decision making, has repeatedly demonstrated that people assess resources in relative terms. The focus has been not only on the influence of social and temporal comparisons, but also on demonstrating how reliance on contextual referents can sometimes lead us astray. Contextual factors such as point of purchase or arbitrary anchors have predictable, seemingly irrational, and robust effects on how people evaluate their resources (Bettman, Luce, & Payne, 1998; Kahneman & Tversky, 1979, 1984; Lichtenstein & Slovic, 2006; Shafir, Simonson, & Tversky, 1993; Tversky & Kahneman, 1981). As alluded to above, these findings may suggest that since knowing what you want is difficult, people replace their wants with approximators of wants in order to ease the assessment of their resources. Thus, although people may use contextual cues because they are generally helpful for assessments, like all approximators they sometimes miss the mark.

What these findings have demonstrated is that there is a general impact of contextual factors on individuals' resource evaluations. However, as mentioned above, evaluation theory (Diener & Lucas, 2000) postulates that we use self-relevant information to assess our resources. The emphasis on self-relevant information suggests that there may be individual differences in how people assess their resources, since what is relevant for one individual may not be relevant for another. With that in mind, the theory is nonetheless silent on systematic sources of variation that can explain and predict individual differences in what contextual information we pay attention to and how it influences our reactions. Until now, little effort has been put into explaining and studying systematic individual differences in resource assessments.

One important source of variation between individuals is the childhood environment. For more than a century, psychologists have emphasized that experiences during childhood are important for how we turn out as adults (Parke, Ornstein, Rieser, & Zahn-Waxler, 1994). Contemporary research has built upon this tradition and integrated evolutionary insights into studies of childhood development. According to life-history theory (e.g., Gangestad & Simpson, 2000; Kaplan & Gangestad, 2005; Stearns, Allal, & Mace, 2008), when resources are limited, organisms face trade-offs when allocating their efforts. The challenge for each organism is to choose good trade-offs that maximize success (Kenrick et al., 2010); that is, trade-offs that help the

organism to navigate through environmental challenges. The environment a child experiences when growing up exerts distinct adaptive pressure, shaping trade-off strategies that fit those challenges.

Similar to the theories of a critical period of language acquisition, some researchers have even gone so far as to suggest that there is a critical period where sensitivity to resource changes is formed (Belsky, Schlomer & Ellis, 2012; Belsky, Steinberg, & Draper, 1991; Belsky et al., 2007; Boyce & Ellis, 2005; Simpson, Griskevicius, Kuo, Sung, & Collins, 2012). Repeated exposure to budget constraints at a young age may strengthen certain neural paths used for resource assessments. In that sense, one's childhood environment may influence which information is salient and considered self-relevant for evaluating personal resources.

Currently there is some indirect empirical support for these theoretical predictions, as researchers have shown that early life resources can have a stronger impact on decision making than current economic resources (e.g., Belsky et al., 1991; Duncan, Yeung, Brooks-Gunn, & Smith, 1998; Ellis, Figueredo, Brumbach, & Schlomer, 2009; Mittal & Griskevicius, 2016; Simpson et al., 2012). Further, recent experimental findings show that the financially poor assess resources differently than the rich, as they in general are less influenced by contextual cues that otherwise have a robust influence on valuation (Shah, Shafir, & Mullainathan, 2015). The poor are assumed to be less influenced by contextual cues, because their budgetary demands set an internal standard for assessing economic resources. Due to being less influenced by the contextual cues often deployed by marketers, the poor are protected from accidentally going over budget. If this reasoning is extended towards repeated exposure to tight budgets, as for those who grow up poor, perhaps this developmental pressure generates skills and abilities that enable efficient money management (Ellis, Bianchi, Griskevicius, & Frankenhuis, 2017). However, very little research exists that directly tests individual differences in resource assessment, and even less research exists that looks at how childhood poverty may impact such evaluations.

This reasoning also fits with cognitive psychology research showing that skills develop after repeated experience, which after a while leads to automatization. Automatization renders a process unconscious, but the process still exerts influence over thought and action (Bargh & Morsella, 2008; Kihlstrom, 1987). Resource assessments are likely to be largely automatic and unconscious, given the repeated need for the individual to make such assessments. However, the specific unconscious skills used for resource assessment are most likely formed by the unique experiences of the individual.

In the work described in this thesis, my colleagues and I took on the challenge of searching for a source of systematic variations that can explain individual differences in resource assessments. In this quest, we combined insights from the evolutionary, developmental, and cognitive psychology research reviewed above.

How does societal experience impact resource assessments?

Just as childhood experiences may make certain information more salient, the societal context within which a resource assessment is made can influence what referents are deemed self-relevant. Dramatic large-scale societal changes inevitably influence the individuals living in that society. When such changes concern resource availability, such as financial crises and market crashes, they are likely to have an effect on which referents become salient when assessing resources.

However, psychology as a discipline has been criticized for ignoring the influence of dramatic societal change. Neither psychological theory nor empirical work adequately addresses the influence of real life societal events (de la Sablonniere, Bourgeois, & Najih, 2013). This is surprising given that psychology as a discipline should be interested in, and able to answer, questions of how individuals adapt to and cope with dramatic societal changes.

One exception to this rule is temporal comparison theory, a psychological theory developed in the late 1970s which posits that in times of rapid change the present is unstable, unfamiliar, and unique. Since the present cannot then serve as a reliable anchor for evaluation, using temporal comparison may be more helpful during uncertain periods (Albert, 1977). In line with these theoretical predictions, there is some research showing that well-being is related to temporal comparisons to the past and the future in societies going through dramatic societal change (de la Sablonnière, Taylor, Perozzo, & Sadykova, 2009; de la Sablonnière, Tougas, & Perenlei, 2009; de la Sablonnière, Tougas, Taylor, et al., 2015).

Although interesting, it is difficult to conclude on the basis of this research that dramatic societal change causes people to assess their current resources in comparison to the past or the future, as the findings are based on correlational cross-sectional survey data. Further, all dramatic societal changes are unique, and the contexts in which they happen have distinct and unique features, making creation of control groups futile. With that in mind, however, the effects of such events would be difficult if not impossible to simulate in the laboratory. A laboratory paradigm of dramatic societal

changes certainly risks becoming superficial and simplistic (de la Sablonnière et al., 2013; Hill, 2006).

A part of the research presented in this thesis comes from a country that has gone through profound societal changes in recent years. Few were as dramatically affected by the 2008 financial crisis as the small island nation of Iceland. The financial crisis in Iceland was the largest collapse in history, once the size of the economy is taken into consideration (The Economist, 2008). For most Icelanders the collapse came as a surprise, as Iceland was the fourth richest country in the world in 2007 (IMF, 2017) and the economy had been steadily growing for the previous 20 years ("Economy of Iceland", 2016). The collapse in late 2008 caused a major economic depression; the national currency fell sharply, and the housing market shattered. Since then, the Icelandic economy has made an almost equally dramatic recovery. Given the scope of the crisis, it is obvious that the financial resources of most Icelanders were affected. What is less clear, however, is how this loss influenced other interrelated personal resources. Moreover, we do not know how this dramatic change influenced the self-relevant referents that Icelanders used to assess their personal resources.

The empirical work presented in this thesis on relative resource assessments in Iceland shares many of the same limitations already mentioned. The results are based on cross-sectional data, with no possible control group or different periods in time that could help in drawing conclusions about causality. However, I believe that the findings raise interesting questions regarding the role of dramatic societal changes in influencing resource assessments. Firmer answers than this thesis provides can only come from more systematic efforts to examine how volatile societal changes influence resource assessments, combining laboratory experiments with studies in the natural context over time.

What are the consequences of relative resource assessments?

When people have determined that they, in comparison to a referent, have too little, sufficient, or more than enough of a certain resource, how do they deal with this realization? According to the unified theory of SAS, four types of reactions occur in response to the different states of resource control (in Daoud, 2018, adapted from Abbott, 2014). People can react by wanting to avoid, reduce, embrace, or inflate scarcity, sufficiency, and abundance. These reactions can occur in response to all of the states of resource control, but the unique combinations of states and strategies are assumed to bring about different embodiments. For example, current scarcity can be avoided by creating debts; sufficiency can be avoided by constantly inflating desires; and

abundance can be avoided by engaging in serial consumption of the relevant resource, moving from one romance, friend, job, or interest to another. How embodiments of the combination of particular states and strategies occur is as much an empirical question as it is a theoretical one, and the systematic mapping of these reactions is in its infancy.

However, this categorization is still useful, as it can easily be used to classify empirical findings on different reactions to perceptions of scarcity. There are many empirical examples of avoidant behavior in response to feeling relatively deprived of resources, such as smoking (Dijkstra & Borlan, 2003), use of alcohol and other drugs (Baron, 2004), gambling (Callan, Ellard, Shead, & Hodgins, 2008), and watching television (Yang, Ramasubramanian, & Oliver, 2008). People also show efforts to reduce their resource scarcity in response to relative deprivation, for example by moonlighting to get extra cash (Wilensky, 1963), by increasing their academic efforts (Wosinski, 1988), or by joining activities that contribute to professional development (Zoogah, 2010). Stronger identification with the ingroup (e.g., Pettigrew et al., 2008), nationalism (e.g., Moore, 2008), and ingroup bias (e.g., Boen & Vanbeselaere, 2002) as responses to relative deprivation could be seen as manifestations of embracing the situation. Finally, behaviors such as intentional sabotage (Olson, Roese, Meen & Robertson, 1995), road blocking (Kelly & Breinlinger, 1996), and approval of violent politics or civil disobedience (e.g., Isaac, Mutran, & Stryker, 1980) can be viewed as empirical examples of scarcity reactions that inflate the current state.

Although the empirical research highlighted above is concerned with external manifestations of reactions to scarcity, the responses can also be internal. People can avoid noticing scarcity by ignoring certain information, such as the decreasing worth of their financial holdings during market decline (Sicherman, Loewenstein, Seppi, & Utkus, 2016). A person can reduce scarcity by working on deliberately decreasing their desires (Huneke, 2005), or embrace scarcity by carefully thinking about and planning for each usage of the resource (Shah et al., 2012). Finally, a person may inflate scarcity by worrying excessively about their lack of resources (Shapiro & Burchell, 2012).

I have only exemplified these principles using scarcity. Since much less research has been conducted on reactions to sufficiency and abundance, it is difficult to categorize the empirical work on these states of resource control in the same fashion. What I nonetheless find helpful with this general framework is the avoidance of prescribing normative labels to the states of resource control and the strategies that can be employed in reactions to these states. Instead of being assumed, the possible reactions should be carefully

thought through and tested. Further, all these examples of reactions to scarcity demonstrate the broad range of responses that a given perception of resource control can lead to.

The empirical studies reported in this thesis cover only a small part of all the possible types of reactions that scarcity, sufficiency, and abundance can evoke. However, their common theme is the focus on internal processes, which can be influenced by any one of the three states of resource control – scarcity, sufficiency, and abundance.

First, my colleagues and I chose to focus on whether people's assessments of their personal resources gave them cause for concern or optimism. Optimism and worry are related constructs, as both are internal, cognitive, future-oriented, and emotionally laden phenomenon. However, optimism is accompanied by a positive emotional flavor which has been associated with many positive benefits such as good mood, good health, and good performance (Peterson, 2000). In contrast, worries are distinctly focused on the uncertainty of the future and are negatively valanced (Barlow, 1988; Borkovec, Robinson, Pruzinsky, & DePree, 1983; MacLeod, Williams, and Bekerian; 1991). Worries have been associated with ill-being such as bad health (Brosschot, Gerin, & Thayer, 2006).

According to the appraisal theory, people worry about the future when they evaluate that their resources are lacking (Folkman et al., 1986 Lazarus & Folkman, 1984). Similarly, one could expect that when people feel that they have more than enough, they have a reason for optimism. We tested this claim empirically by studying the relationship between relative resource assessments and both optimism and worries about the future. If future expectations are in line with how we evaluate our current resources, this can be seen as a measure of the extent to which people react to the different states of resource control by inflating them. In detail, if there is a linear relationship between resource assessments and future outlook, so that perceived scarcity is related to more concerns while perceived abundance is related to more optimism, it can be said that individuals extrapolate a continuation of the current state into the future. This can perhaps explain why future expectations are in return related to effective use of personal resources (Carver, Scheier, & Segerstom, 2010; Fredrickson, 2001), as the inflated concerns can further motivate and mobilize efforts to secure, sustain, and safeguard resources.

Second, I have focused on how economic resource availability in childhood can determine resources assessments later in life. In line with Shah et al. (2015), I argue that being able to make stable economic resource assessments that are not easily manipulated by contextual cues helps people in economic scarcity to avoid exceeding their budget. In contrast, since

consistent resource assessments are likely to be more effortful, the rich might simply not bother, and suffice by using external contextual cues for their resource assessments. In both instances, this can be seen as an indication of the extent to which people react to the different states of resource control by embracing them.

I then propose in line with an adaptation-based account of childhood development (Ellis et al., 2017) that being exposed to an impoverished environment early on creates developmental pressure that leads to the acquisition of skills that are essential for good money management. Since those growing up poor most likely have to learn how to stretch a dollar, they may have developed an automatized ability that protects them from being susceptible to external contextual cues when making purchasing decisions. Children who grow up where money is not an issue, or is readily available, may not have the same incentives to develop such a skill. My colleagues and I tested this claim by studying whether the past poor make more consistent economic resource assessments later in life. Further, since past and current resources tend to be related, we took care to measure and control for both subjective judgment of current economic resources and measures of current income, in order to focus on the specific influence of childhood resources on current assessments of what products are worth.

How can resource assessments be measured?

So far, I have mostly tried to clarify a map of the theoretical territory that this thesis rests upon. The aim of this thesis, however, is to move beyond theoretical mapping towards empirically measuring resource assessments. Therefore, a central question to ask is how can resource assessment be measured?

In an overview of psychological research on resources, Hobfoll (2002) concluded that the most common way of measuring resources is to focus on one resource at a time. Doing so ignores the core insight of COR theory (Hobfoll, 1989), namely that resources are interrelated, and that correlated resources can either buffer stress or exacerbate resource losses. This claim cannot be tested when only one resource is studied at a time.

Hobfoll has repeatedly called for researchers to study multiple interrelated resources simultaneously. In that spirit, around the same time as COR was conceived, Hobfoll (1988) created an instrument aimed at measuring a broad array of interrelated resources. The Conservation of Resources Evaluation measures 74 resources. In contrast to the influential theory, this instrument has not received widespread acclaim, and to my knowledge has only been used in a handful of studies (Davidson et al., 2010; Hobfoll, Lilly, & Jackson,

1991; Lane & Hobfoll, 1992; Wells, Hobfoll, & Lavin, 1997). This may be because the scale is long and repetitive, and thus impractical for use in empirical work, but in any case it is problematic that the psychometric properties and validity of this instrument are largely unknown.

Researchers following the COR theory have therefore tended to find other ways to measure interrelated resources besides the one suggested by Hobfoll himself. The most common approach is to choose a subset of resources deemed particularly relevant for the focus of the study, and then use different types of validated scales for each of the resources in this subset (Halbesleben et al., 2014). To illustrate, Lee, Sudom, and McCreary (2011) focused on the Big Five personality traits of hardiness, mastery, optimism, positive and negative affect, and self-esteem; Feldman, Davidson, and Margalit (2015) measured hope, self-efficacy, and optimism; and Grandey and Cropanzano (1999) chose to focus on factors influencing conditions at work such as age, gender, and job security along with factors influencing conditions at home such as the number of children at home and marital status. These are just some of the many examples of resource subsets in the literature.

A variant of this approach is to focus on the resources that are relevant in a particular context. For example, one study focused on the interrelated resources important for pregnancy (TAPPS; Nuckolls, Cassel, & Kaplan, 1972), while another study explored the interrelated resources in the context of caregivers (Picot Caregiver Rewards Scale [PCRS]; Fulton Picot, Youngblut, & Zeller, 1997). Yet another study examined the resources of firefighters in New York (Bacharach, Bamberger, & Doveh, 2008), and another examined the resources of prison guards (Neveu, 2007).

Using these methods to study the claims of COR theory creates a great deal of diversity within the field. Diversity of thought and scientific pluralism definitely has its merits, as each conceptualization and measurement thereof has the potential to provide a unique contribution to our understanding of resources and the theory. Further, converging evidence that stems from different researchers, theoretical perspectives, and methods provides more convincing evidence for a theoretical claim than evidence that stems from one researcher using one conceptualization and one measurement. Darwin's theory of evolution is not convincing just because of his 1859 publication *On the Origin of Species*, but because of the diversity of converging evidence that followed.

However, the number of resources that could be included in subsets of interrelated resources, and the accompanying scales designed to measure them, are as of today practically endless. The COR theory provides no guidance for best practice in choosing the subset of resources to focus on. Further, there is the open question of how findings that are based on one

subset of resources, and findings based on completely different subset of resources, should be synthesized, compared, and contrasted. Similarly, it is difficult to know whether a subset of resources derived from one context can be applied to another context. Adding to this difficulty is the fact that scales with different labels sometimes measure very similar constructs, while scales with the same name can measure dissimilar constructs. As Halbesleben et al. (2014) point out in their conceptual review of COR theory, the lack of consensus over which resources should be included in the subset "has perpetuated the concern that anything can be a resource since it becomes very easy to measure nearly any psychological construct and label it as a resource" (p. 1353). If anything can be seen as a resource, the COR theory can be neither confirmed nor refuted.

Some researchers have tackled this problem by creating a battery that collects a broad sample of common resources into a single instrument, thus reducing the baffling number of resources to consider. A review of the measurement of interrelated resources (Halbesleben et al., 2014) argues that a concise and valid measurement instrument is desperately needed to more systematically test the propositions that COR theory puts forth. The authors go on to recommend this approach, pointing out that this procedure provides a certain compromise between a measurement that is concise and one that is broad. This, they say, has the potential to better unite the research within the field. Early attempts towards this goal include Foa and Bosman's (1979) development of the Inventory of Wishes for measuring interpersonal resources. However, this instrument has not been widely used, perhaps due to issues with internal consistency (Stangl, 1993). In recent years, the most notable work following this reasoning is perhaps the work on psychological capital (Luthans, Youssef, & Avolio, 2007). The PsyCap questionnaire has led to some consensus regarding which subset of positive employee resources should be the focus of study and how to measure them, which has enabled a more systematic accumulation of knowledge within that area. However, the resources represented in this battery are restricted to resources that can be managed and that influence performance in the workplace (Luthans, Luthans, & Luthans, 2004).

To my knowledge, only one study has used a generalized measurement of interrelated personal resources that manages to also demonstrate good psychometric properties (Lorenz, Beer, Pütz, & Heinitz, 2016). The Compound PsyCap Scale (CPC-12) builds on the work on psychological capital, but modifies it so that it can be used in a generalized setting (Luthans & Youssef, 2004). Although the results indicate that the positive employee resources measured with the PsyCap questionnaire seem to be generalizable to a wider context, conceptually the choice of the subset of resources to focus

on is still derived from the organizational context. The chosen subset of resources might have been different if the choice had first emerged from a general setting instead.

Further, the CPC-12, like most other scales measuring resources, fails to explicitly address the distinction between the resources that people feel that they control and their wants for that resource. When aiming to measure perceptions of scarcity, sufficiency, and abundance, researchers must be able to distinguish between the availability of a given resource and the longing for that resource, as both are necessary conditions for being in any of the three states of resource control (Daoud, 2018). An exclusive focus on resource availability risks confusing availability with desire, and desire with availability. Thus, measuring only one does not provide an answer to whether a resource is experienced as sufficient because it is readily available or because it is not desired. This is important, because the answer implies the appropriate response towards the given state of resource control. Should want be inflated or deflated? Or is it more fitting to search for ways to influence the availability of the resource?

Finally, in contrast to directly asking people to assess their personal resources, another approach is to design experiments that reveal intriguing aspects of how we assess our resources. With the help of such experiments, psychologists have repeatedly demonstrated that we use reference points, contextual clues, and anchors to evaluate our resources (Bettman et al., 1998; Kahneman & Tversky, 1979, 1984; Lichtenstein & Slovic, 2006; Shafir et al., 1993; Tversky & Kahneman, 1981). These findings contradict economic theory, which assumes that individuals have stable preferences that determine resource assessments (Ariely, Loewenstein, & Prelec, 2003). Beyond experiments providing researchers with superior grounds to argue for causal paths between variables, when carefully designed, such methods also have the ability to study aspects of resource assessments that we may be unaware of. For example, if people are explicitly asked to indicate whether they prefer a gamble with no loss compared to the same gamble accompanied by a small loss, most people would prefer the former alternative. However, when Morewedge, Holtzman, and Epley (2007) designed an experiment in which one group was randomly chosen to assess the attractiveness of the small-loss gamble and another group to assess the same gamble without the loss, the results revealed that people in fact prefer the small-loss lottery. Without the small loss as a comparison standard to assess the attractiveness of the gamble, people found it difficult to evaluate how attractive it was. Thus, the experiment revealed that even if we explicitly say that we do not prefer a small loss over no loss, when it all comes down to it, we seem to implicitly prefer this comparison standard to having no standard at all.

In similar vein, even though it is generally accepted that childhood experiences influence adulthood, this is seldom something we are explicitly cognizant of in our daily lives. Much of what was learnt in childhood has become automatized and unconscious. More specifically, people may be unaware of automatized skills that have come about in response to developmental pressure from scarce economic resources in childhood. Asking individuals directly about such unconscious abilities may thus be futile. Rather, using experimental designs and indirect indicators of being in a state of scarcity, sufficiency, and abundance, such as susceptibility to contextual nudging when making purchasing decisions, may be a more appropriate method for studying such unconscious processes than directly asking people.

All the empirical studies in this thesis take into account that resources are always assessed with the help of a comparison standard. This comparison standard may be conscious or unconscious; may be labeled as a want, a need, a desire, a social comparison, a temporal comparison, or a contextual effect; and may stem from childhood experiences or a dramatic societal change. Regardless of the specific characteristics of the comparison standard, all the measurements in this thesis revolve around this simple notion that resource assessments are inherently relational. I believe that the only way to empirically follow through on this claim is to consider both the resource and the comparison standard. Since many researchers focus on either resources or comparison standards, much of the empirical work presented in this thesis is motivated by the need to study both simultaneously. In this work, my colleagues and I have also tried to answer the call for a broad but concise measurement of interrelated resources.

Research aims

The overarching aim of this thesis was to explore different aspects of how individuals assess their personal resources. The three empirical studies presented in this thesis all address this general aim, but in different ways. This general aim was broken down into the following research questions, which are addressed in the empirical papers:

1) How can resource assessments be conceptualized?
2) How can personal resource assessments be measured?
3) Are relative resource assessments related to how individuals view the future?
4) Do childhood resource experiences influence resource assessments later in life?

Summary of the empirical articles

Introduction

Each of the three empirical articles presented in this thesis covers a different aspect of resource assessments. My colleagues and I viewed resource assessments from different theoretical standpoints. More specifically, in Studies I and II we combined insights from COR theory, relative deprivation research, and the unified SAS framework. In contrast, Study III was guided by work on the scarcity mindset and evolutionary developmental psychology. In Study I, we used questionnaire responses regarding relative resource assessments to build models of how individuals assess their personal resources. In Study II, we used questionnaire responses to evaluate the relationship between relative resource assessments and whether individuals were optimistic or concerned about the future. In Study III, we used a series of experimental designs to test whether childhood experiences influenced resource assessments later in life. Here, resource assessments were experimentally manipulated by deploying contextual cues, and the ways in which this influenced the participants' resource assessments were inferred from their willingness to pay for products, expensiveness ratings, and propensity to travel for a discount.

Another way of summarizing the articles is to highlight which type of validity each one placed at the forefront. Study I addressed content validity by examining whether the items we used to measure relative resource assessment actually corresponded to the constructs we intended to measure. Study II concentrated on predictive validity, examining whether relative resource assessments were related to the constructs that theoretically they should be related to. Finally, Study III was concerned with internal validity, and thus tested whether the causal effect of contextual cues on current economic resource assessments depended on the economic resources previously available in childhood. Since earlier findings indicate that current economic resources influence susceptibility to contextual cues, we took special care to control for this impact in order to focus on the unique contribution of childhood experiences of economic resources.

Although the studies differ in which type of validity is the primary concern, they all share a focus on both statistical conclusion validity and

external validity. Firstly, all three were high-powered and used larger samples than are commonly used in psychology. Secondly, unlike many studies in psychology that generalize on the basis of samples consisting solely of psychology students, the samples were either representative population samples or good-quality community samples. Finally, all studies aimed for high statistical rigor when analyzing the data. This is especially evident in the last study, where the hypotheses and statistical analyses were pre-registered and peer-reviewed before data collection occurred.

Three large online questionnaires formed the building blocks of Study I. Using responses from multiple questionnaires enabled a rigorous test of content validity. All three questionnaires used the newly developed Relative Resource Assessment Scale (RRAS), which is a concise generalized instrument measuring personal resource assessments. In all questionnaires, participants were asked to assess whether their personal resources were scarce, sufficient, or abundant, using different reference points.

There was some slight variation between the questionnaires in the specific RRAS items used. Furthermore, each questionnaire included unique proposed dependent variables, facilitating the test of the predictive validity of the RRAS. In Study II, we used data from the first questionnaire in Study I to specifically test whether and how the RRAS was predictive of how people view the future. We selected the data from the first questionnaire based on the chronological order of the research process. The preliminary results from the other two questionnaires currently exist in the form of working papers, and are not a part of this thesis. These preliminary results indicate that higher scores on RRAS are related to decreased worries about personal and societal harm (Einarsdóttir, Hansla, & Johansson, 2018d) and increased subjective well-being (Einarsdóttir, Hansla, & Johansson, 2018e). However, as the reader of this thesis may observe after going through Studies I and II, there still remain unanswered questions regarding the construct validity of the RRAS. Some of these questions are related to the predictive validity of the RRAS, and these can be partially answered with results from the working papers mentioned above. However, these papers are still a work in process and have not yet received the same critical scrutiny as the articles presented in this thesis.

As this thesis is a part of a larger project inquiring into perceptions and consequences of perceived scarcity, sufficiency, and abundance, the project goal was not only to develop and study the construct validity of a measurement of relative resource assessments, but also to study these perceptions from a broad theoretical and methodological standpoint. The results from Studies I and II are based on correlations between different variables, and as such they provide information about the resources that

individuals explicitly and consciously perceive that they have. In Study II, where my colleagues and I looked at the relationship between relative resource assessment and future outlook, we were able to study how this relationship naturally occurs in the population. Moreover, the results were embedded in a specific context, in that the responses came from Icelanders who had recently experienced substantial turmoil following the bankruptcy of the banking system and collapse of the economy. In contrast, Study III enabled us to look at the causal influence of the experimental manipulations on the participants' resource assessments as moderated by past (controlled for current) individual differences in resource availability. Here, rather than being explicitly stated, responses were recorded in choice patterns that were designed to reveal implicit resource assessment. We also looked at how the experimental conditions interacted with childhood poverty, a factor that has been proposed to exert unconscious influences over resource assessments later in life. I believe that each approach provides valuable and unique insights into the process of resource assessments which could not be achieved using only one approach.

Still, by focusing on economic resources only, Study III ignores the proposition put forth by COR theory that resources are interrelated. I felt this was a necessary delimitation in order to be able to specify a directional hypothesis and to be able to exert the necessary control that is the prerequisite of causal inferences. However, it may be advisable in future studies to build on our findings by including the insights from COR theory. For example, it is possible that the effect of childhood economic poverty is moderated by other interrelated resources available in childhood. Nevertheless, I believe it is unwise to test this proposed relationship before the relationship between childhood economic poverty and economic resource assessment later in life has been established.

Overall, I would argue that by combining the insights from the correlational and experimental studies — studies that focus on conscious and unconscious responses — more can be understood about the process of how people come to the conclusion that they have scarce, sufficient, or abundant resources. I maintain that this choice is appropriate given that the evaluation process is at the heart of this thesis.

An overview of the methods, samples, and measures used in the empirical work presented in this thesis is given in Table 1.

Table 1. Overview of the empirical studies

Study	Method	Samples	N	Resource measure	Other measures
I: Q 1	Online questionnaire	Representative population sample	611[a]	RRAS[b]	N/A
I: Q 2	Online questionnaire	Community-based sample	1045	RRAS[c]	N/A
I: Q 3	Online questionnaire	Representative population sample	756	RRAS[d]	Items measuring economic, time, and socio-emotional resources (VM)
II	Online questionnaire	Representative population sample	611[a]	RRAS[b] (IV)	Optimism (DV) Worry (DV)
III: E 1	Online experiment	Community sample stratified by income	1442	Willingness to pay for beer (DV)	Beer on the beach experiment (IV) (Thaler, 1985)
III: E 2	Online experiment	"	"	Propensity to travel for a discount (DV)	Proportional thinking (IV) replicating Hall's (2008) adaptation of Tversky and Kahneman (1981)
III: E 3	Online experiment	"	"	Attractiveness rating of the lottery (DV)	Dominance lottery (IV) (Slovic, Finucane, Peters, & MacGregor, 2002)
III: E 4	Online experiment	"	"	Expensiveness rating of a streaming service (DV)	Small vs. large account prime (Morewedge, Holtzmann, & Epley, 2007)
III: E 5	Online experiment	"	"	Willingness to buy a ticket (DV)	Mental budgeting (Tversky & Kahneman, 1981)
III: E 6	Online experiment	"	"	Willingness to pay for products (DV)	Anchoring willingness to pay (Ariely, Loewenstein, & Prelec, 2003)

Note. E = experiment, DV = dependent variable, IV = independent variable, N/A = not applicable, Q = questionnaire, RRAS = Relative Resource Assessment Scale, VM = validation measures, " = as above (the same sample was used in all experiments).

[a]The same samples were used in Study I, Questionnaire 1 and Study II.

[b] This version of the RRAS contained 64 items measuring economic, temporal, social, and emotional resources using comparisons to the past, the future, others, and wants.

[c] This version of the RRAS contained 48 items measuring economic, temporal, social, and emotional resources using comparisons to the past, the future, others, and wants.

[d] This version of the RRAS contained 36 items measuring economic, temporal, social, and emotional resources using comparisons to the past, others, and needs.

Study I

Purpose

The purpose of Study 1 was an initial evaluation of the content validity of the RRAS, an instrument developed to measure how individuals relatively assess their personal resources. The goal was to explore both internal and external convergent and discriminant validity. The test of convergent validity was focused on the extent to which the items were able to measure the four intended types of resource, namely economic, temporal, social, and emotional resources. The test of discriminant validity was directed towards finding out whether these four types of resource were distinguishable from each other. We also evaluated the extent to which referents influenced the assessment of personal resources.

Method

Three online questionnaires were conducted. The same basic method was used for all questionnaires, although there were slight variations between the exact items used. Questionnaires 1 (N=611) and 3 (N=756) were conducted in Iceland among a representative sample of the population, and Questionnaire 2 (N = 1045) was conducted in Sweden among a community sample. All three questionnaires asked the participants to assess their economic, temporal, social, and emotional resources in comparison to a referent, which could be wants, needs, the past, the future, or others. Questionnaire 3 also contained items for external validation of the four proposed resource constructs. The data were analyzed by comparing different models using a multitrait multimethod (MTMM) approach, which enabled exploration of internal content validity. External content validity was evaluated by studying the correlation between the proposed resources and other items aimed at measuring similar constructs.

Results

The results indicated that the RRAS measured three distinct resources, namely economic, temporal, and socio-emotional resources. This resembled our a-priori assumption, except that social and emotional resources were not adequately distinct. We also found good evidence for the convergent validity of these three resources. Further, we found that the referents did influence the resource assessments. Economic resources seemed to be especially susceptible to the influence of reference points, perhaps because this type of resource can be more easily conserved and exchanged than temporal and socio-emotional resources.

Study II

Purpose

The purpose of Study II was to further validate the RRAS by demonstrating relevant predictive validity. Individuals who possess large resource reservoirs have a cause for optimism, since their resources can help them cope with varied imminent situations. In contrast, people who lack resources have cause for concern, since this leaves them vulnerable to challenges. Thus, our purpose was to demonstrate that our conceptualization and measurement of relative resources was related to the way in which people view the future. We also performed further evaluation of the factor structure of the RRAS.

Hypotheses

H_1: After controlling for background variables, there will be a positive and additive relationship between each personal resource and optimism.
H_2: After controlling for background variables, there will be a negative and additive relationship between each personal resource and worries.
H_3: Each reference point will have an additive effect on the relationship between relative resources and future outlook
H_4: The items measuring personal resources will cluster into the following four factors: economic, emotional, social, and temporal resources.

Method

The data for this paper came from Questionnaire 1, which is described in the summary of Study 1. In this questionnaire, economic, temporal, social, and emotional resources were assessed using four referents: the past, the future, wants, and others. In addition to using the RRAS, we also asked participants how optimistic and how worried they were about the future. We used a two-step hierarchical regression to study the relationship between relative resource assessments and future outlook, with background variables controlled for in the first step and relative resources added in the second step. The factor structure of the resource items was evaluated using exploratory factor analysis.

Results

We gained partial support for H_4, as the factor structure indicated again that our scale measured economic, temporal, and socio-emotional resources. We also gained partial support for H_1 and H_2, as economic and socio-emotional resources both showed the expected relationships with optimism and worries. Finally, H_3 was partially supported, as comparisons to the past and

comparisons to others had an additive effect on the model predicting future outlook. Comparing one's economic and socio-emotional resources to the past was the most consistent predictor of Icelanders' future outlook.

Study III

Purpose

The purpose of Study III was to examine the influence of childhood experiences on resource assessments later in life. The basic premise was that growing up in poverty could lead to the development of skills essential for good money management. We proposed that one such skill was having a stable sense of how much products are worth; as this ability would help individuals to avoid being manipulated by contextual cues when ascribing value. For example, we expected that those who had been poor in the past would have a preference for how much they were willing to pay for a beer, regardless of whether it came from a hotel or a grocery store (Thaler, 1985). Conversely, we expected those who had been rich in the past to be more likely to display the classic context effect of being willing to pay more for a hotel beer than a beer from a grocery store, even when the products in both scenarios were identical.

Hypotheses

H_1: Participants who felt that they had more childhood economic resources when growing up will display classic context effects for resource assessments, while participants with fewer childhood economic resources will make more consistent valuations.

H_2: The interaction between experimental condition and childhood economic resources will remain after controlling for subjective economic resources and income.

Method

We conducted a large online questionnaire consisting of six experimental designs (N = 1442). We based our designs on experimental paradigms previously used to demonstrate contextual influences on valuations, and measured childhood resources and current resources with items used in previous studies. We pre-registered our hypotheses, methods, and statistical analysis, and submitted these for peer review before the data were collected. According to our plan, we conducted regression analysis where the main focus was on the interaction between experimental conditions and childhood resources. Additionally, we tested the replicability of the classic context effects from previous work.

Results

On the whole, we did not gain evidence for our hypotheses. We found only anecdotal evidence that the previously-poor were less influenced by contextual cues in their valuations. We were, however, for the most part able to replicate the classic context effects from previous findings. This shows that overall the experimental manipulations worked as intended, and that the participants' resource assessments were in general influenced by contextual cues. The evidence was less consistent when we tried to replicate previous findings demonstrating that lower-income individuals are less susceptible to contextual manipulation when assessing economic resources (Shah et al., 2015). Although all the effects were in the same direction, our results point to generally non-significant and much weaker effects than presented in the original research.

General discussion

Main findings

The central role of referents

The common thread in all three empirical studies is the focus on referent-dependent resource assessments. In Study I, we evaluated the extent to which reference points influenced the content validity of resource assessments. In Study II, we estimated how referents influenced the predictive validity of resource assessments. In Study III, we tested how contextual referents influenced economic resource assessments. In all studies we found evidence that people assess their resources in relations to a referent. The findings from Study I demonstrate that the latent comparison factors influenced the assessment of all the latent resource factors. This was especially evident when economic resources were assessed. The results from Study II suggest that knowledge about how individuals assess resource levels in comparison to their past, and to others who are important to them, is useful when we want to predict how they see the future. Finally, although we did not find strong evidence that childhood resource experiences or current income level influenced susceptibility to contextual cues when making economic assessments, our findings do demonstrate that contextual cues have a robust effect on resource assessments. Taken together, these findings emphasize that when measuring resource assessments, researchers would be wise to include clearly specified referents.

Previous scales developed to measure personal resources usually ignore this point. As our findings are line with the multitude of well-known studies that demonstrate how contextual cues influence resource assessments (e.g., Bettman et al., 1998; Kahneman & Tversky, 1979, 1984; Lichtenstein & Slovic, 2006; Shafir et al., 1993; Tversky & Kahneman, 1981) and the many theorists who have stressed this point (e.g., Festinger, 1954; Runciman, 1966), this oversight is interesting. I suspect that many resource researchers simply view reference point dependence as a nuisance that in the worst case causes measurement errors but can otherwise safely be brushed off. Given both our findings and previous theoretical and empirical work, I would encourage other resource researchers to view the influence of referents as a source of theoretically interesting variations worthy of being included in the development of measurements of personal resources. The inclusion of

referents also reveals something important about the process by which people make such a judgment. Understanding more about the process by which resources are assessed has practical implications. For example, if we learn that comparisons to the past become especially salient following a financial crisis, this knowledge can be used by policy makers. Indeed, it is conceivable that the Donald Trump campaign slogan "Make America Great Again" was so successful because it acted to inflate the temporal resource assessments that were salient to many Americans following the global economic crisis of 2007–2008. However, other policies might use this knowledge to help people re-establish a positive view of the future, by focusing on strategies that reduce the discrepancy between the past and the present.

Resource structures

Although I have emphasized the role that referents play in people's resource assessments, this does not mean that we should throw out the champagne with the cork. The resources themselves are still at the core of the judgment. In fact, the findings from Study I, which were based on three large online questionnaires, in two countries, with good quality samples, show that the responses to the RRAS were for the most part explained by the latent resource factors. The results from both Study I and Study II provide evidence for dividing the RRAS items into economic resources, temporal resources, and socio-emotional resources.

In Study I we found good evidence of the convergent and discriminant validity of these three resource factors. In line with COR theory (Hobfoll, 1989), these resources correlated with each other while still showing evidence of building three distinct factors. We further gained some initial support for the external convergent and discriminant validity of these resource factors. Additionally, in Study II we found the same three-factor structure using a different analysis method. Since we also found that the factor structure of the scale remained similar in both Iceland and in Sweden, we gained support for factor invariance of the three-resource structure. Finally, we found that both economic and socio-emotional resources were related to optimism and worries, even after controlling for the influence of various background variables and the other resources. Taken together, these findings on content and predictive validity can be seen as initial evidence for construct validity of the RRAS, as it indicates that we were for the most part able to measure what we claimed to measure.

Little evidence for childhood influences on valuation

In Study III we searched for systematic individual differences in the way people assess the value of different products. Until recently (Shah et al., 2015), little effort has been put into studying whether individuals differ in the way they assess their resources. Based on theoretical insights into the central role of the economic resources available when growing up (e.g., Ellis et al., 2017), we hypothesized that the previously-poor and the previously-rich would differ in the way they prescribe economic value to products later in life. We found only anecdotal evidence that the previously-poor tend to be less susceptible to contextual influences than the previously-rich.

Since absence of evidence is not evidence of absence, null results are always hard to interpret. However, I feel that our design and methodology provided more diagnostic information than is often the case with null findings. Given that our theoretical framework, design, method, and statistical analysis procedure were peer reviewed and approved before data collection began, our hypothesis was tested with the utmost care and according to best practice standards. That gives me some confidence in stating that there is little reason to believe that there is a systematic difference between those who grew up poor and those who grew up rich in their resource assessments for the types of scenarios that we tested. However, there are theoretical reasons to believe that looking at other valuation tasks may reveal systematic differences that depend on prior experiences of resource availability. Later in this chapter, under the subsection on conceptual issues, I will discuss how the information from these results can be combined with theoretical insights to modify both the hypothesis and the test of that claim.

Critique and limitations

There are several limitations to this thesis, as well as several issues within this research field, that I want to comment on. This section is organized according to granularity, starting with issues that are closest to the empirical work presented in this thesis and ending with large-scale theoretical questions that I believe must be addressed by the researchers, myself included, who study how people assess their personal resources.

Methodological issues

Content validity

In this research, we studied the content validity of the RRAS scale. The MTMM approach allowed us to conduct a more ambitious test of the internal content validity of the scale than is often the case in psychological research. However, further efforts could be made to establish content validity. For example, by combining self-report questionnaire responses with in-depth interviews and reports from partners, friends, and family, more confident conclusions could be drawn regarding the content validity of the resource structures. Additionally, rather than just obtaining explicit statements of resource assessments, these can also be inferred from the choices that people make, as is often done in economics (Tversky & Griffin, 1991). Clever designs can therefore help us go beyond explicit statements to infer people's unconscious resource assessments. Although this is what we did in Study III, further experimental studies could be designed to validate the content of the RRAS by focusing on the same resources and referents that the scale measures. For example, it would be interesting to see whether similar responses to personal resource assessments that are deliberately and consciously compared to social and temporal referents could be observed when such referents are unconsciously manipulated using experimental designs. Finally, only very tentative steps were taken to explore external content validity. Future research should include more established scales for a more definitive test of the external validity of the scale.

Predictive validity

The predictive validity of the RRAS was evaluated in Study II. Since relative resource assessments are likely to evoke a large number of responses, it can be valuable to use the categorization of reactions to scarcity, sufficiency, and abundance specified in the unified theory of SAS (in Daoud, 2018, adapted from Abbot, 2014). As noted in the introduction to this thesis, the theory posits that people can react to all three states of resource control by avoiding, reducing, embracing or inflating them.

The linear relationship we found between relative resource assessments and future outlook may be seen as an inflated response to the different states of resource control. More specifically, if someone evaluates their current resources as lacking, they may inflate this response by also worrying. If, in contrast, someone evaluates their current resources as abundant, they may inflate this judgment by feeling optimistic about the future. Preliminary

results from the Swedish sample (Questionnaire 2, Study I) suggested a similar linear relationship between RRAS and specific worries about personal and societal threats and dangers (Einarsdóttir et al., 2018d). Similarly, the preliminary results from the second Icelandic questionnaire (Einarsdóttir et al., 2018e) indicate that the scores on the RRAS scale predicted feelings of satisfaction with life (Diener, Emmons, Larsen, & Griffin, 1985).

It is important to note, however, that given the cross-sectional nature of our data, I can only speculate about the direction of the relationship between resources and future outlook. Most likely the relationship is bidirectional, with more resources causing optimism and optimism facilitating more resource attainment. Thoughtful experiments and longitudinal research are recommended to further the understanding of the directionality of this relationship.

Future attempts to evaluate the predictive validity of the RRAS could be helped by studying whether people in addition to inflating their relative resource assessment also try to avoid, reduce, or embrace their current states of resource control (Abbot, 2014; Daoud, 2018). For example, do people who have sufficient resources according to their RRAS score avoid this state by also setting more ambitious goals? Are low RRAS scores able to predict behaviors that reduce scarcity, such as working extra shifts or moonlighting? Are high RRAS scores related to embracive behaviors that allow people to enjoy their abundance by spreading their consumption in a serial fashion over a lifetime?

What is important here is to provide a good test of all the different types of reactions to all states of resource control – scarcity, sufficiency, and abundance. Most previous research is focused exclusively on reactions to scarcity. However, the little research that exists on relative abundance (e.g., Grofman & Muller, 1973; Guimond & Dambrun, 2002) does show that responses to this state of resource control are often surprising, and thus cannot be assumed to be the opposite of scarcity reactions. I believe that reactions to sufficiency and abundance are of the same theoretical importance as scarcity, and therefore should gain the same empirical attention.

Internal validity

In Study III, we did not find the hypothesized effect of childhood poverty on assessing product value later in life. However, this does not necessarily mean that the hypothesis was wrong; it may rather indicate that the test needs to be modified. This belief is not just stubbornness, but can be supported by looking more closely at the theory of how developmental pressure shapes

decision making later in life. According to this theory (Ellis et al., 2017), the developmental pressure caused by a lack of resources in childhood can lead to the development of contextualized skills and abilities that are adaptive in a particular environment. The way we tested our hypothesis might not have adequately reflected the type of resource assessments that were the most important cause for concern among those growing up poor. The theory predicts that only those repeated experiences that are unique to those growing up poor turn into automatized skills and abilities for that group. The products that were assessed in the six experiments were mostly associated with luxuries, entertainment, and other hedonistic pleasures (e.g., massages, electronic products, beer, chocolate, and theater visits). It is possible that focusing instead on trade-offs, where choosing one product means giving up another, could more adequately capture the types of resource assessments that might have been influenced by the developmental pressure of growing up poor. For example, perhaps the previously-poor are better at avoiding market manipulations by noticing hidden taxes (Goldin & Homonoff, 2013) or sales tricks that dupe people into paying a higher unit price for larger-size than smaller-size products (Binkley & Bejnarowicz, 2003).

Beyond these adjustments, perhaps the previously-poor and the previously-rich only differ in their economic resource assessments in conditions that remind them of their specific childhood resource experiences. The sensitization hypothesis postulates that sometimes the specialized adaptive skills need to be triggered in order to be revealed (Ellis et al., 2017). This hypothesis has gained support in other experimental studies of the varied ways in which childhood scarcity influences later-life decision making (Griskevicius et al., 2013; Griskevicius, Delton, Robertson, & Tybur, 2011; Griskevicius, Tybur, Delton, & Robertson, 2011; Hill, Prokosch, DelPriore, Griskevicius, & Kramer, 2016; Mittal, Griskevicius, Simpson, Sung, & Young, 2015; Mittal & Griskevicius, 2014, 2016). It may well be that growing up poor teaches individuals certain money management skills that the previously-poor only use when called upon. When there is no signal from the environment that this skill needs to be activated, there may be no visible difference between the resource assessments of the previously-poor and the previously-rich. Future studies testing the influence of childhood environment on resource assessment should employ scarcity manipulation in order to find the hypothesized effect.

Conceptual issues

Theoretical reflections about the personal resources in the RRAS

In order to improve the measurement of resource assessments, some theoretical clarifications need to be made. Although we proposed that the RRAS scale would measure social and emotional resources separately, our findings indicate that these cluster into a single socio-emotional resource. This finding is in line with other resource designations that refer, for example, to psychosocial resources (Harber, Einev-Cohen, & Lang, 2008) or psychological capital (Luthans et al., 2007). However, instead of accepting that social and emotional resources belong to the same construct, items could be created that more definitively aim to measure distinct features of emotional and social resources. In order to achieve this, theoretical guidance is needed that clarifies the distinction between the two. Some researchers have suggested that social resources are characterized by the information from others that one is valued, loved, and cared for (Cobb, 1976; Hobfoll, Freedy, Lane, & Geller, 1990). Emotional resources, then, could in contrast be seen as internal information from the self that one is valued, loved, and cared for. This internal confirmation may be either the results of our biological make-up (Neiss, Sedikides, & Stevenson, 2002) or the result of repeated exposure to external confirmation in childhood that leads to secure attachments (Bowlby, 1969; Field, 1996). Incorporating this distinction into the development of an empirical measurement of social and emotional resources may lead to a more distinguishable factor structure.

Furthermore, although the temporal resource factor showed good content validity, we were not able to demonstrate the predictive validity of this construct. There was only a weak relationship between temporal resources and future outlook, and this relationship disappeared when controlling for the influence of the other resources. Perhaps the relationship between temporal resources and future outlook is more complicated than we had anticipated. It is possible that some people who are busy may feel very optimistic about the future, since they are spending their time working towards an important and meaningful goal, while others who are busy may feel overwhelmed, stressed, and helpless, since they do not have time to do the things that they need and want to do. The measurement of relative temporal resources should perhaps focus on how satisfied individuals are with their time use, instead of just how much time people feel that they have. In fact, other researchers have found that satisfaction with time use has a closer relationship with well-being than quantitative measurements of time (Boniwell, 2005; Etkin, Evangelidis, & Aaker, 2015). For example, instead of asking people to indicate how much

time they have compared to others, the question could be modified to ask people how satisfied they are with their time use compared to others.

Meeting quality criteria for a generalized measure of personal resources

Beyond improving the measurement of the particular resources studied in this thesis, a generalized scale of personal resource assessment must be able to satisfy the following four criteria: 1) it must be parsimonious, 2) it must generate testable hypotheses, 3) the resources must be mutually exclusive, and 4) the measurement must be exhaustive (Törnblom & Kazemi, 2012). I feel that this thesis has at least touched upon the first three criteria. Parsimony was addressed in this research by focusing on only four general types of resource, that we reduced to three (economic, socio-emotional and temporal) on the basis of our empirical findings. These resources have been identified as central personal resources by many other researchers (e.g., economic and social resources: Buss, 1983; Foa, 1971; social and psychological resources: Hobfoll, 2002; temporal resources: Gerson, 1976; Heirich, 1964; Törnblom & Kazemi, 2012). The results of the hypotheses testing conducted in Study II suggest that many more hypotheses could be generated on the basis of the results and tested in the future. For example, perhaps responses to different states of resource control are influenced by the type of resource being assessed. Although we found indications that people inflate their responses to their personal resource assessments, as the results showed that perceived scarcity of economic and socio-emotional resources was associated with worries and perceived abundance was associated with optimism, temporal resources may give rise to a different response. It is possible that scarcity of time leads to other responses, such as avoidance, reduction attempts, or embracive responses. Finally, the mutual exclusiveness of the factor structures was addressed with the test of both convergent and discriminant validity in Study I. Although I do not claim that criteria 1 to 3 are now fully met, the empirical work is an initial attempt to meet these criteria.

The exhausting pursuit of the exhaustiveness criterion

The criterion that remains untouched is exhaustiveness. Since resources are such a broad category, complete exhaustiveness is perhaps neither realistic nor desirable. A good measurement should instead manage to create a compromise between exhaustiveness and parsimony. In an attempt to get an overview of the multiple constructs that have received the label of "resource", I looked at four articles and made a list of the resources

mentioned (Table 2). Although this list is far from exhaustive, it contains over 170 unique resources! What this demonstrates is that meeting the exhaustiveness criterion for a generalized measure of interrelated personal resources is no small task. It is thus relatively easy to come up with more resources that a generalized measure of resource assessments should consider including.

Table 2. A list of resources

Resource	
1. A caring mother	88. Living with children
2. A caring father	89. Locus of control
3. Ability to communicate well	90. Loneliness (*the absence of which being a resource)*
4. Ability to organize tasks	91. Loyalty of friends
5. Acknowledgement of my accomplishments	92. Marital relationship control
6. Active coping	93. Marriage
7. Adequate clothing	94. Mastery
8. Adequate financial credit	95. Material possessions
9. Adequate food	96. Medical insurance
10. Adequate home furnishings	97. Money
11. Advancement in education or job training	98. Money for advancement or self-improvement
12. Affection from others	99. Money for extras
13. Articulate	100. Money for transportation
14. Assertive	101. More clothing than necessary
15. Athletic ability	102. Motivation to get things done
16. Autonomy	103. Necessary home appliances
17. Avoidance coping	104. Necessary tools for work
18. Behavioral withdrawal	105. Network contact
19. Child contact	106. Network roles
20. Children's health	107. Network support
21. Close friends	108. Optimism
22. Companionship	109. People to learn from
23. Competence	110. Perceived constraints
24. Confidence	111. Perceived mastery
25. Conscientiousness	112. Persistence
26. Contact with others	113. Personal health
27. Contributions to how much control others have over you	114. Personal transportation (car, truck, etc.)
28. Control	115. Personality hardiness
29. Core self-evaluation	116. Physical attractiveness
30. Decision authority	117. Position of authority
31. Domain control	118. Positive affect
32. Education	119. Positive feelings about myself
33. Emotion regulation	120. Positive reappraisal
34. Emotion-focused coping	121. Positively challenging routine
35. Emotional intelligence	122. Providing children's essentials
36. Emotional self-control	123. Psychological well-being
37. Emotional stability	124. Public speaking skills

Resource	
38. Emotional support	125. Reinforcement contingencies
39. Emotional/sexual adult pair bonding	126. Relationship pathways
40. Energy	127. Relationship with children
41. Experience	128. Relationships
42. Expert knowledge	129. Relinquishment of control
43. Extra resources for children	130. Resilience
44. Family contact	131. Retirement security (financial)
45. Family stability	132. Rewards
46. Family support Family-friendly workplace policies	133. Role as a leader 134. Savings or emergency money
47. Feeling independent	135. Seeking emotional support
48. Feeling that I am successful	136. Seeking social support
49. Feeling that I have control over my life	137. Self-confidence
50. Feeling that my future success depends on me	138. Self-control
51. Feeling that my life has meaning/purpose	139. Self-discipline
52. Feeling that my life is peaceful	140. Self-discipline for work
53. Feeling valuable to others	141. Self-efficacy
54. Feeling that I am accomplishing my goals	142. Self-esteem
55. Finance control	143. Self-worth
56. Financial assets (stocks, property, etc.)	144. Sense of coherence
57. Financial help if needed	145. Sense of commitment
58. Financial stability	146. Sense of humor
59. Free time	147. Sense of pride in myself
60. Friends	148. Similar interests
61. Good manners	149. Skills
62. Good marriage	150. Social activities
63. Good relationship with my children	151. Social contact
64. Health of family/close friends	152. Social integration
65. Help with child care	153. Social networks
66. Help with tasks at home	154. Social skills
67. Help with tasks at work	155. Social support
68. Hope	156. Social support from co-workers and supervisors
69. Housing that suits my needs	157. Social ties
70. Ideas	158. Strong romantic relationship
71. Inducements	159. Spouse/partner's health
72. Influential connections	160. Stable employment
73. Information	161. Stamina/endurance
74. Instrumental support	162. Status/seniority at work
75. Intellectual/recreational adult pair bonding	163. Support from friends
76. Intelligence	164. Support from spouse
77. Intimacy with at least one friend	165. Tangible assets
78. Intimacy with one or more family members	166. Task-oriented coping

Resource	
79. Intimacy with spouse or partner	167. Tenacious goal pursuit
80. Involvement in organizations with others	168. Time away from work
81. Involvement with church,	
82. synagogue, etc.	169. Time for adequate sleep
83. Job security	170. Time for work
84. Knowing where I am going with my life	171. Time with loved ones
	172. Understanding from my employer/boss
85. Knowledge	
86. Larger home than I need	173. Work control
87. Living for today	

Note. The resources in this list are based on several sources: the Conservation of Resources Evaluation, which measures 74 resources (Hobfoll, 1988); a sample of psychological resources reported in the organizational literature (Halbesleben, Neveu, Paustian-Underdahl, & Westman, 2014); a list of 21 resources measured in a sample of college students (Diener & Fujita, 1995); and a list of social and psychological resources taken from a systematic review of psychosocial resources (Wiley, Bei, Bower, & Stanton, 2017). The table collates all of the resources from these articles, with overlapping resources only shown once.

One way to tackle this issue is to rely on resource taxonomies. Theorists studying resources have struggled for almost 50 years with developing a taxonomy of resources that convincingly reduces resources into a classification that is both comprehensive and manageable (Hatfield & Rapson, 2012). Table 3 lists several attempts at resource classifications to be found in the literature. As the reader can observe, there are certain overlaps between the different taxonomies. For example, many contain resources related to finances, social support, and optimism. This provides some hope that the different taxonomies could be integrated into one another. However, there are also classes that are unique, such as services, macro resources, and spiritual resources.

Table 3. A list of resource taxonomies

Taxonomy	Reference
Universalistic symbolic status: universal rights of humans, basic human dignities	Binning & Huo (2012)
Particularistic symbolic status: respectful gestures, politeness, acknowledgement of standing	
Particularistic concrete status: ranking, title, relative position in organization	
Particularistic concrete status: status symbols such as jewelry, luxury vehicles	
Social support: partner support, network size, instrumental support, emotional support, loneliness	Bisschop, Kriegsman, Beekman, & Deeg (2004)
Coping resources: self-esteem, self-efficacy, mastery	
Compliance, respect, personal attraction, social acceptance, social approval, and instrumental services	Blau (1964)
Social, economic, cultural, and symbolic resources	Bordieu (1984)
Economic resources	Buss (1983)
Social resources: process and content social resources	
Psychological and social resources	Caplan (1974)
Object, condition, personal, energy	Doane, Schumm, & Hobfoll (2012)
Quality of life resources: money, skill, sentiment, time	Gerson (1976)
Economic, temporal, social and emotional resources	Einarsdóttir, Hansla, & Johansson (2018a, 2018b)
Social resources: love, services, goods, money, status, information	Foa, 1971
Higher-order moral resources	Folger (2012)
Psychosocial resources	Harber, Einev-Cohen, & Lang (2008), Nuckolls, Cassel, & Kaplan (1972)
Status, material, social, and personal	Hobfoll (2002)
Personal resources	Lin (2001)
Social resources: network and contact resources.	
Economic capital – what you have: finances, tangible assets	Luthans, Luthans, & Luthans (2004)
Human capital – what you know: experience, education, skills, knowledge	
Social capital – who you know: relationships, network of contacts, friends Psychological capital – who you are: confidence, hope, optimism, resilience	
Hoping, willing, purposing, endeavoring, committing, relating	Savickas (2003)
Personal, interpersonal, and structural resources	Stets & Cast, 2007
Macro resources, condition resources, constructive resources, key resources, social support resources, energy resources	ten Brummelhuis & Bakker (2012)
Psychosocial resources: personal control, optimism, social support, coping strategies, self-esteem	Taylor & Seeman (2006)
Love, money, power, influence, sacredness, learning, knowledge, health, competitiveness, esthetics	Turner (2012)
Spiritual resources: prayer, meditation, healing rituals, belief, forgiveness	Walsh (2008)
Social resources: social support	Wiley, Bei, Bower, & Stanton (2017)
Psychological resources: mastery, hope, optimism, self-esteem, positive and negative affect, satisfaction with life	

Note. This table builds on and extends Box 3.2 in Törnblom & Kazemi (2012)

For one taxonomy to be more convincing than another, a clear theoretical and empirical rationale for the inclusion and exclusion of resource classes is essential. Although my colleagues and I argue for the inclusion of economic, social, emotional, and temporal resources in our measurement instrument, there is no argument other than parsimony for the exclusion of other resource classes mentioned in Table 3, or any other conceivable resource classes for that matter. The other resource taxonomies listed in Table 3 generally share this problem. Without such an argument, it is difficult to advocate that any one taxonomy and its accompanying measurement instrument can provide a better test of the principles of COR theory than another taxonomy. Thus, we have arrived at a similar problem as encountered in the introduction — researchers having to choose a sub-sample of resources — but now the choice is between taxonomies instead. Although this problem is more manageable, since there are fewer taxonomies compared to the huge number of personal resources, COR researchers are again forced to choose between taxonomies with no clear guidance on how to choose.

Here, the field of personality research may serve as a guidepost. In a review of the history of the measurement of personality, John and Srivastava (1999) described the personality field before any consensus had been reached on a taxonomy of personality traits. The description shares a striking resemblance to the current state of affairs for interrelated resource research. Like resources, personality has been conceptualized at varying levels of abstraction and breadth, with the help of numerous theoretical perspectives. Although each conceptualization contributed to the puzzle of understanding personality, solving that puzzle was difficult due to the bewildering number and variety of scales designed to measure personality, combined with a lack of instructions for choosing and combining the puzzle pieces. Further, mirroring the current situation within the resource field, many of the personality scales with the same name measured concepts that were not equivalent, while scales with different labels measured overlapping constructs. This lack of a common language made it hard for researchers to communicate with each other.

Thus, what personality researchers needed was for someone to lay down the edges of the puzzle. However, as Allport (1958) pointed out early on, this could not be achieved by any one researcher or theoretical perspective, since "each assessor has his own pet units and uses a pet battery of diagnostic devices" (p. 258) — and who lets go of their trusted pets without a fight?

Bearing this in mind, perhaps the matter of inclusion in or exclusion from a taxonomy of generalized personal resources cannot be settled on theoretical grounds alone. Personality researchers solved this dilemma by following the lexical hypothesis when developing the now commonly accepted taxonomy

and measurement of personality called the Big Five. Instead of relying on a complex theory, the work is based on one simple proposal: if an entity is important to people, description of this entity will be a part of the language (Ashton & Lee, 2005; Galton, 1884; Goldberg, 1981). Putting this hypothesis to the test, thousands of trait adjectives were first identified and then examined with cluster analysis, which finally resulted in the Big Five personality structure (McCrae, 1989).

The creation of the Big Five taxonomy was a Herculean task. The first attempts started in the early 20th century (Allport and Odbert, 1936; Baumgarten, 1933; Klages, 1926), and a consensus emerged towards the end of the century (John & Srivastava, 1999). The importance of such efforts can hardly be understated. In fact, most Nobel prizes have gone to work on the development of measurements, rather than theory (Greenwald, 2001, 2002). Gifford and Cave (2012) summarize this point nicely when they state: "In general, science cannot advance without some organization of complex constructs or items, chemistry's periodic table being the prime example" (p. 223). I believe that resource research is in desperate need of a periodic table, and the current state of affairs for research following COR theory is hindering advancement due to the disorganization of the core concept resources. I agree with Halbesleben et al. (2014) in their dramatic sentiment that "the future of COR rests on researchers' ability to appropriately measure resources" (p. 1354).

In this thesis, I have presented my attempt at measuring resources following insights from COR theory and listed my efforts to meet the criteria for a valid measurement. However, I do not by any means claim that RRAS, as is, has the potential to unify the psychological resource field. Instead, it should be seen as a prototype which is in need of improvement. Validating an instrument should be an iterative process in which each empirical study is followed by theoretical reflection. Since my resource typology and measurement of it, along with other classification systems and measurement instruments currently available in the field, fail to convincingly meet the exhaustiveness criterion, I call out for future research to make a serious attempt at meeting this criterion. I believe that the resources that are generally important for people are the ones that people have a word for. If this is true, a long list of resources could be systematically reduced into resource taxonomies. Although the list of all resource words is clearly extensive, it is nonetheless finite, making it a good starting point. I urge future researchers to take on the Herculean challenge of using the lexical approach to create a unifying taxonomy of personal resources.

Theoretical reflections about the reference points in the RRAS

As I have emphasized in this thesis, knowing whether you have scarce, sufficient, or abundant resources depends on the relationship between your resources and a comparison standard. Thus, a better measure of how people assess their state of resource control must consider both parts of this equation. A systematic and structured understanding of comparison standards is thus no less important than a systematic understanding of resources, in the pursuit of a generalized measurement instrument of relative assessment of personal resources.

We can ask whether our measurement of reference points using the RRAS satisfies the four criteria given above; that is, whether it: 1) is parsimonious, 2) generates testable hypotheses, 3) is mutually exclusive, and 4) is exhaustive (Törnblom & Kazemi, 2012). Again, we can say that the empirical research in this thesis manages to touch upon the first three criteria. In Study I, my co-authors and I focused on studying five central reference points often featured in research on relative deprivation.

In Study II, we tested and generated new hypotheses. We found that comparing resources to the past was especially informative when predicting Icelanders' future outlook, and since Icelanders have recently gone through an economic crisis, we propose on the basis of this finding that dramatic social changes causes comparisons to the past to become especially salient (de la Sablonnière et al., 2013). This could be verified in future studies by using experimental or longitudinal design.

In Study I, we tested the discriminant validity of the latent comparison factors. Again, we conclude that for the most part we found support for the distinction of the different reference points, although the findings from the last questionnaire showed a considerable overlap between comparing resources to needs, others, and the past.

There may be theoretical reasons for this particular lack of distinction. As highlighted in the introductory chapter, wants/needs can be seen as the fundamental reference point that determines whether we feel our resources are lacking or not (Daoud, 2018; Gifford & Cave, 2012). Just like resources, however, wants are an ill-defined concept, and needs theories have been criticized for using circular reasoning where anything that contributes to well-being can be considered a need and these needs in return produce well-being (Diener & Lucas, 2000). Theories that have attempted to create an exhaustive list of universal needs have been sharply criticized and gained limited empirical support (Barling, 1977; Campbell, Converse & Rodgers, 1976; Lawler & Suttle, 1972; Wahba & Bridwell, 1976). For that reason, we also studied other comparison standards such as social and temporal

comparisons. These reference points can be seen as contributors to wants, or as approximators of wants. Since they are more specific than needs, obtaining a valid measurement becomes easier. However, we did not explicitly include either the distinction between wants and needs or approximators of those wants when empirically testing and modeling the relationship between referents in Studies I and II. It was simply not feasible to include this distinction at this stage, due to the complexity that it would have introduced to the statistical models. However, given the indications from our finding from the third questionnaire in Study I, that comparisons with needs overlapped with temporal and social comparisons, perhaps efforts should be made to include this distinction in future research and to test its implications. For instance, can we find empirical evidence that social and temporal comparison are contributors to wants? Can we isolate this relationship in order to decipher the direction of causality?

Finally, we again turn to the exhaustion criterion. One could argue that we have again arrived at the same dilemma as for resources, where researchers are forced to choose a subset of comparison standards to study from a bewildering number of possible referents. In some sense this is true, and it has been pointed out that a major challenge when studying relative resource assessments is to know what referent becomes salient to a person in a given context (Walker & Pettigrew, 1984).

Although there is no taxonomy of reference points that resembles the periodic table or the Big Five, I would argue that there is still a greater cohesion among researchers studying relative deprivation than among researchers studying COR theory. Early on, Runciman (1966) made a useful classification that still holds today. He believed that an individual can feel two types of deprivation; they can feel personally deprived, and/or they can feel that the group they belong to is deprived. The RRAS measurement instrument does not include an assessment of group resources. However, since it was designed to look at personal resource assessments, I feel that this exclusion is motivated.

Furthermore, personal comparison standards can be refined into more specific referents. A theoretical and meta-analytical review of the research on relative deprivation (Smith et al., 2012) listed the following six types of personal comparisons: social comparisons to ingroup, social comparisons to outgroup, and intrapersonal comparison to the past, future, desired, and deserved self. Assuming that Smith et al. were able to capture the range of personal comparison standards used in the field, only two types of comparisons seem to be missing from the RRAS in order to be called exhaustive: comparisons with an outgroup and comparisons to the deserved self.

With that being said, each of the referents mentioned above could be seen as an overarching category within which further refinement can be made. For instance, de la Sablonniere, Taylor, et al. (2009) moved beyond comparisons to recent past in their reconceptualization of temporal comparisons, and suggested that researchers should include several past events that represent dramatic changes. Moreover, they suggested that when looking at the past, perceived trajectories are no less important than the point estimates. The theoretical framework used in Study III reminds us of the importance of the distant past, as childhood experiences are important for how we turn out as adults (Parke et al., 1994). Although we may not be consciously aware of how childhood experiences influence our current resource assessments, it is likely that poverty brings about unique lessons and skills which are carried into adulthood (Ellis et al., 2017).

Incorporating all possible refinements may contribute to a more detailed understanding of how relative assessments are made. I have only exemplified such theoretical clarification using comparisons to the past, but similar comparisons could be made for each comparison standard. Furthermore, we also have a myriad of possible contextual cues that come in all shapes and sizes, like those deployed in Study III to manipulate resource assessments. However, including such additional refinements or context effects in the RRAS scale risks damaging the parsimony. Moreover, as the RRAS is a questionnaire, I feel it is motivated to only include referents that people can consciously report and explicitly use for their resource assessments. Of the six comparison standards identified by Smith et al. (2012), two are currently missing from the RRAS. I believe that adding these two comparison standards to a revision of the RRAS would produce a good compromise between meeting the criteria of parsimony and exhaustiveness. Thus, future revisions of the RRAS may benefit from asking participants to assess their personal resources with the help of a social comparison to an outgroup and an intrapersonal comparison to the deserved self, in addition to the comparisons to the past, future, important others, and desired self that are already included in the scale. Although all possible comparison standards are not (and will not be) included in the RRAS, it approaches exhaustiveness for comparison standards to a greater extent than exhaustiveness for inclusion of personal resources.

Interacting complexity

A surprising amount of complexity is introduced when we follow through on the simple notion that being in a state of either scarcity, sufficiency, or abundance depends on the relationship between resources and wants. This

becomes especially apparent if this proposition is coupled with the insight that different types of resources are interrelated and wants can arise from various sources. To illustrate, say that in front of us is a girl called Anna and we want to find out whether she has too few, just enough, or too many apples. As we have pointed out, the answer depends on how many apples Anna has and how much she wants those apples. However, since resources are interrelated, her apple assessment is intertwined with how many other fruits she has at her disposal. If Anna only has three apples and no other fruits, she may be experiencing scarcity. However, if Anna has three apples, four oranges, and a handful of grapes, she may be in a state of sufficiency. Further, her want for apples may be informed by other referents such as how many apples her friend Berta has, how many apples Anna had yesterday, and how many apples she expects in the future. Essentially, this means that when evaluating the relationship between resources and wants we should consider their associations with other resources and reference points.

Beyond the interrelationships between resources and referents, there is also the possibility that these entities interact with each other. Resources can interact with other resources, reference points can interact with other referents, and resources and reference points can interact in a way that uniquely influences whether people perceive scarcity, sufficiency, or abundance. To illustrate, economic resources may have a stronger influence on whether people experience scarcity, sufficiency, or abundance among individuals who report low emotional resources compared to high emotional resources. Comparison to others may exert a stronger influence over perceptions of resource control among individuals who feel that their resources are diminishing, instead of increasing, compared to the past. Finally, resources and reference points may interact. For instance, using wants as a comparison standard may have a stronger influence on economic resources than temporal resources. This illustrates that there may be something to the saying: “you shouldn’t compare apples with oranges”.

Interactions between resources and reference points dramatically increase the level of complexity. Even for models where the list of resources and referents is not exhaustive, as for RRAS where four resources are compared to four reference points, the number of possible interactions to be tested quickly becomes unmanageable. Testing and interpreting all these interactions is neither practical nor feasible from a statistical standpoint, as the more inferences you make simultaneously, the more likely you are to be wrong. For example, the chance of type I error increases with the number of tests performed; this is why statisticians advocate corrections to the p-value when multiple comparisons are made. Instead of multiple concurrent tests, I have two suggestions for how this complexity can be dealt with.

The first suggestion is based on theoretical refinement. Instead of empirically testing all possible interactions, a more theoretically-driven exploration can lead to more rigorous tests and convincing explanations of a interaction effect. Perhaps the key to such a refinement is a more detailed understanding of the underlying dimensions or attributes of each resource type. In other words, the reason that apples and oranges are not comparable may be that apples have certain attributes that oranges do not share, and vice versa.

Several researchers have identified underlying attributes that can be used to organize resource types. To name a few, resources can differ in their availability, their rates of fluctuation, depletion, and replenishment, their ability to be divided, and their valence (Blalock, 1991; Bothner, Godart, and Lee, 2010; Galvin & Lockhart, 2012; Sabbagh & Shlomit, 2012; Stangl, 1989). Commenting on the contribution of each dimension is beyond the scope of this thesis, but I will briefly highlight two attributes that I believe are particularly important for theorizing about possible interactions between reference points and resources.

First, some resources can be used in exchange for other resources and can be conserved over time. These resources have been labeled universalistic resources. Other types of resources, which are fleeting and allow only internal exchanges, have been labeled particularistic resources (Foa & Foa, 1976). To illustrate, money is a handy resource because it can be exchanged for any number of other resources and conserved for long periods of time in your bank account. In contrast, social support needs to be paid back in kind and its influence perishes quickly. Suggesting that you will pay back a friend for listening to your problems with a wire transaction of 10 dollars is more likely to cause offense than to produce a feeling that your relationship is reciprocal, and the warm glow after a pat on the back from your boss will most likely last for minutes rather than days or years.

The functionality of universalistic resources means that people may tend to want more resources that are exchangeable and conservable, regardless of their intrinsic value or contribution to quality of life. In contrast, since particularistic resources cannot be stored or exchanged, people may be satisfied as long as they have a sufficient amount of that resource. Thus this dimension contributes to the assessment of whether you have too little, more than enough, or a sufficient amount of a given resource type.

Second, another way of organizing resources is along a tangibility dimension (Foa & Foa, 1974; Kazemi & Törnblom, 2012). Tangible resources correspond to a physical entity, while intangible resources are nonphysical. To illustrate, bills in your wallet are tangible examples of economic resources, while stock options are intangible. Your best friends can

be seen as a tangible social resource, while the good advice and help they provide you are intangible. This attribute can have important implications for the assessment of resources. It is likely that the more tangible a resource, the easier it is to assess. An extension of this proposition may be that since tangible resources are easier to assess, their availability may be more salient in people's minds. Applying these propositions to the two main principles of COR theory (Hobfoll, 1989), this could mean that individuals may be more motivated to seek, preserve, and protect tangible resources compared to intangible resources, although both types are deemed valuable. Further, losses of tangible resources may be more salient than losses of intangible resources, especially if the former can be assessed more easily than the latter. This theoretical insight may help explain why people tend to maximize a numerical resource, regardless of its underlying value (Hsee, Yu, Zhang, & Zhang, 2003). The numerical figure serves as a tangible aspect that can be assessed more easily than the underlying true value of the resource.

My second suggestion for dealing with the complexity stemming from the interactions between resources and referents, is based on zooming in and simplifying research designs in order to better understand resource assessments. In fact, this is what I tried to do in Study III. There, my colleagues and I studied the interaction between past poverty and experimental manipulations of contextual cues on how people assess economic resources. This simplification enabled us to formulate clear and directional predictions in advance and put them to the test. I believe that this would have been difficult to achieve if other resources had been simultaneously added to the mix. Still, by focusing on economic resources in the past and the present only, we ignored the interrelationship between different resource types, as well as other possible referents. One way of uniting the insights from COR theory with the wish to conduct hypothesis-driven work of unconscious processes influencing resource assessment is to place such simplified interaction experiments within a larger theoretical framework. By recognizing that resource types interact with types of referents, as well as defining the boundaries within which resources and referents should be considered, it becomes possible to sequentially map out the way in which resources and referents interact. Thus, the converging evidence can help us answer the question of how to compare apples and oranges.

Conclusion

Psychologists have long been interested in the role personal resources play in helping people cope with the challenges that life brings about. Although it is

commonly accepted that personal resources are important, the area currently lacks a solid and agreed-on measurement. In this thesis I have tried to conceptualize and measure a subset of personal resource assessments. I have both tested resource assessments directly using questionnaires, and inferred them indirectly from responses to experimental conditions. I have emphasized that perceptions of scarcity, sufficiency, and abundance are found in the discrepancy between resources and a salient comparison standard. I have highlighted conscious and unconscious contributors to these perceptions, and considered the interrelationships between resources. I have incorporated these theoretical insights into the measurement of resource assessments and gained further insight from the empirical results. There is however much left to do in order to improve and further develop these types of measurements. It is my hope that this research sparks interest in creating a better connection between personal resource theories and empirical measurement of resource assessments. I especially encourage resource researchers to follow in the footsteps of the creators of the Big Five, who used the lexical approach to create an agreed-on taxonomy of personality, as I believe this approach has the potential to unify research in the field. Further, I hope both the theoretical and the empirical findings from this thesis spur continued interest in how comparison standards shape our perceptions of resource control. I believe that systematic endeavors in these directions have the potential to change a straggling field into a vitalized hotbed for accumulating knowledge.

References

Abbott, A. (2014). The problem of excess. *Sociological Theory*, *32*, 1–26. doi: 10.1177/0735275114523419

Albert, S. (1977). Temporal comparison theory. *Psychological Review*, *84*, 485–503. doi: 10.1037/0033-295X.84.6.485

Allport, G. W. (1958). What units shall we employ? In G. Lindzey (Ed.), *Assessment of human motives* (pp. 238–260). New York: Rinehart.

Allport, G. W., & Odbert, H. S. (1936). Trait-names: A psycho-lexical study. *Psychological Monographs*, *47*, No. 211.

Ariely, D., Loewenstein, G., & Prelec, D. (2003). "Coherent arbitrariness": Stable demand curves without stable preferences. *The Quarterly Journal of Economics*, *118*, 73–106. doi: 10.1162/00335530360535153

Ashton, M. C., & Lee, K. (2005). A defence of the lexical approach to the study of personality structure. *European Journal of Personality*, *19*, 5–24. doi: 10.1002/per.541

Bacharach, S. B., Bamberger, P. A., & Doveh, E. (2008). Firefighters, critical incidents, and drinking to cope: The adequacy of unit-level performance resources as a source of vulnerability and protection. *Journal of Applied Psychology*, *93*, 155–169. doi: 10.1037/0021-9010.93.1.155

Bargh, J. A., & Morsella, E. (2008). The unconscious mind. *Perspectives on Psychological Science*, *3*, 73–79. doi: 10.1111/j.1745-6916.2008.00064.x

Barling, J. I. (1977). An empirical test of Maslow's theory of motivation in an industrial setting. *Psychologia Africana*, *17*, 99–110.

Barlow, D. H. (1988). *Anxiety and its disorders*: *The nature and treatment of anxiety and panic*. New York, NY: Guilford.

Baron, S. W. (2004). General strain, street youth and crime: A test of Agnew's revised theory. *Criminology, 42,* 457–483. doi: 10.1111/j.1745-9125.2004.tb00526.x

Baumeister, R. F., & Leary, M. R. (1995). The need to belong: Desire for interpersonal attachments as a fundamental human motivation. *Psychological Bulletin, 117,* 497–529. doi: 10.1037/0033-2909.117.

Baumgarten, F. (1933). Die Charaktereigenschaften [The character traits]. In *Beiträge zur Charakter- und Persönlichkeitsforschung (Monograph 1)*. Bern, Switzerland: Francke.

Belsky, J., Schlomer, G. L., & Ellis, B. J. (2012). Beyond cumulative risk: Distinguishing harshness and unpredictability as determinants of parenting and early life history strategy. *Developmental Psychology, 48,* 662. doi: 10.1037/a0024454

Belsky, J., Steinberg, L., & Draper, P. (1991). Childhood experience, interpersonal development, and reproductive strategy: An evolutionary theory of socialization. *Child Development, 62,* 647–670. PMID: 1935336

Belsky, J., Vandell, D. L., Burchinal, M., Clarke-Stewart, K. A., McCartney, K., & Owen, M. T. (2007). Are there long-term effects of early child care? *Child Development, 78,* 681–701. doi: 10.1111/j.1467-8624.2007.01021.x

Bettman, J. R., Luce, M., & Payne, J. (1998). Constructive consumer choice processes. *Journal of Consumer Research, 25,* 187–217. doi: 10.1086/209535

Binkley, J. K., & Bejnarowicz, J. (2003). Consumer price awareness in food shopping: The case of quantity surcharges. *Journal of Retailing, 79,* 27–35. doi: 10.1016/S0022-4359(03)00005-8

Bisschop, M. I., Kriegsman, D. M., Beekman, A. T., & Deeg, D. J. (2004). Chronic diseases and depression: The modifying role of psychosocial resources. *Social Science & Medicine, 59,* 721–733. doi: 10.1016/j.socscimed.2003.11.038

Blalock, H. M. (1991). *Understanding social inequality: Modeling allocation processes*. Newbury Park, CA: Sage.

Boen, F., & Vanbeselaere, N. (2002). The relative impact of socio- structural characteristics on behavioral reactions against membership in a low-status group. *Group Processes & Intergroup Relations, 5*, 299–318. doi: 10.1177/1368430202005004003

Boniwell, I. (2005). Beyond time management: How the latest research on time perspective and perceived time use can assist clients with time-related concerns. *International Journal of Evidence Based Coaching and Mentoring, 3*, 61–74.

Borkovec, T. D., Robinson, E., Pruzinsky, T., & DePree, J. A. (1983). Preliminary exploration of worry: Some characteristics and processes. *Behaviour Research and Therapy, 21*, 9–16. doi: 10.1016/0005-7967(83)90121-3

Bothner, M. S., Godart, F. C., & Lee, W. (2010). *What is social status? Comparisons and contrasts with cognate concepts*. Working Paper, European School of Management and Technology, Berlin.

Bowlby, J. (1969). *Attachment and loss: Attachment (vol. 1)*. New York, NY: Basic Books.

Boyce, W. T., & Ellis, B. J. (2005). Biological sensitivity to context: I. An evolutionary–developmental theory of the origins and functions of stress reactivity. *Development and Psychopathology, 17*, 271–301. PMID: 16761546

Brosschot, J. F., Gerin, W., & Thayer, J. F. (2006). The perseverative cognition hypothesis: A review of worry, prolonged stress-related physiological activation, and health. *Journal of Psychosomatic Research, 60*, 113–124. doi: 10.1016/j.jpsychores.2005.06.074

Brush, S. G. (1996). Dynamics of theory change in the social sciences. *Journal of Conflict Resolution, 40*, 523–545.

Buss, A. H. (1983). Social rewards and personality. *Journal of Personality and Social Psychology, 44,* 553–563. doi: 10.1037/0022-3514.44.3.553

Callan, M. J., Ellard, J. H., Shead, N., & Hodgins, D. C. (2008). Gambling as a search for justice: Examining the role of personal relative deprivation in gambling urges and gambling behavior. *Personality and Social Psychology Bulletin, 34,* 1514–1529. doi: 10.1177/0146167208322956

Campbell, A., Converse, P. E., & Rodgers, W. L. (1976). *The quality of American life: Perceptions, evaluations, and satisfactions*. New York, NY: Russell Sage Foundation.

Carver, C. S., Scheier, M. F., & Segerstrom, S. C. (2010). Optimism. *Clinical Psychological Review, 30,* 879–889. doi: 10.1016/j.cpr.2010.01.006

Cheung, F., & Lucas, R. E. (2016). Income inequality is associated with stronger social comparison effects: The effect of relative income on life satisfaction. *Journal of Personality and Social Psychology, 110,* 332. doi: 10.1037/spp0000059

Cobb, S. (1976). Social support as a moderator of life stress. *Psychosomatic Medicine, 38,* 300–314. doi: 10.1097/00006842-197609000-00003

Cook, T. D., Campbell, D. T., & Shadish, W. (2002). *Experimental and quasi-experimental designs for generalized causal inference*. Boston, MA: Houghton Mifflin. ISBN: 9780395615560

Crosby, F. (1976). A model of egoistical relative deprivation. *Psychological Review, 83,* 85–113. doi: 10.1037/0033-295X.83.2.85

Daoud, A. (2018). Unifying studies of scarcity, abundance, and sufficiency. *Ecological Economics, 147,* 208–217. doi: 10.1016/j.ecolecon.2018.01.019

Davidson, O. B., Eden, D., Westman, M., Cohen-Charash, Y., Hammer, L. B., Kluger, A. N., . . . Spector, P. E. (2010). Sabbatical leave: Who gains and how much? *Journal of Applied Psychology, 95,* 953–964. doi: 10.1037/a0020068

de la Sablonnière, R., Bourgeois, L. F., & Najih, M. (2013). Dramatic social change: A social psychological perspective. *Journal of Social and Political Psychology*, *1*, 253–272. doi: 10.5964/jspp.v1i1.14

de la Sablonnière, R., Taylor, D. M., Perozzo, C., & Sadykova, N. (2009). Reconceptualizing relative deprivation in the context of dramatic social change: The challenge confronting the people of Kyrgyzstan. *European Journal of Social Psychology*, *39*, 325–345. doi: 10.1002/ejsp.519

de la Sablonnière, R., Tougas, F., & Perenlei, O. (2009). Beyond social and temporal comparisons: The role of temporal inter-group comparisons in the context of dramatic social change in Mongolia. *Journal of Social Psychology*, *150*, 98–115. doi: 10.1080/00224540903365331

de la Sablonnière, R., Tougas, F., Taylor, D. M., Crush, J., McDonald, D., & Perenlei, O. R. (2015). Social change in Mongolia and South Africa: The impact of relative deprivation trajectory and group status on well-being and adjustment to change. *Social Justice Research*, *28*, 102–122. doi:10.1007/s11211-015-0236-8

Diener, E. D., Emmons, R. A., Larsen, R. J., & Griffin, S. (1985). The satisfaction with life scale. *Journal of Personality Assessment*, *49*, 71–75.

Diener, E., & Fujita, F. (1995). Resources, personal strivings, and subjective well-being: A nomothetic and idiographic approach. *Journal of Personality and Social Psychology*, *68*, 926–935. PMID: 7776188

Diener, E., & Lucas, R. E. (2000). Explaining differences in societal levels of happiness: Relative standards, need fulfillment, culture, and evaluation theory. *Journal of Happiness Studies*, *1*, 41–78. doi: 10.1023/A:1010076127199

Dijkstra, A., & Borland, R. (2003). Residual outcome expectations and relapse in ex-smokers. *Health Psychology*, *22*, 340–346. PMID: 12940389

Duncan, G. J., Yeung, W. J., Brooks-Gunn, J., & Smith, J. R. (1998). How much does childhood poverty affect the life chances of

children? *American Sociological Review, 63*, 406–423. doi: 10.2307/2657556

Economy of Iceland. (2016, April 30). In *Wikipedia, the free encyclopedia*. Retrieved from https://en.wikipedia.org/w/index.php?title=Economy_of_Iceland&oldid=717929628

Einarsdóttir, G., Hansla, A., & Johansson, L.-O. (2018a). The convergent and discriminant validity of the Relative Resource Assessment Scale. *Unpublished manuscript*.

Einarsdóttir, G., Hansla, A., & Johansson, L.-O. (2018b). Looking back in order to predict the future: Relative resource assessments and their relationship to future expectations. *Nordic Psychology*. Advance online publication. doi: 10.1080/19012276.2018.1457452

Einarsdóttir, G., Hansla, A., & Johansson, L.-O. (2018c). The value of money: On how childhood economic resources influence value assessments later in life. *Comprehensive Results in Social Psychology*. doi: 10.1080/23743603.2018.1465804

Einarsdóttir, G., Hansla, A., & Johansson, L.-O. (2018d). Relative resource assessments and worries about societal problems in Sweden. *Unpublished manuscript*.

Einarsdóttir, G., Hansla, A., & Johansson, L.-O. (2018e). Relative resource assessments and well-being following an economic crisis. *Unpublished manuscript*.

Ellis, B. J., Bianchi, J., Griskevicius, V., & Frankenhuis, W. E. (2017). Beyond risk and protective factors: An adaptation-based approach to resilience. *Perspectives on Psychological Science*, *12*, 561–587. doi: 10.1177/1745691617693054

Ellis, B. J., Figueredo, A. J., Brumbach, B. H., & Schlomer, G. L. (2009). Fundamental dimensions of environmental risk. *Human Nature, 20*, 204-268. doi: 10.1007/s12110-009-9063-7

Etkin, J., Evangelidis, I., & Aaker, J. (2015). Pressed for time? Goal conflict shapes how time is perceived, spent, and valued. *Journal of Marketing Research*, *52*, 394–406. doi: 10.1509/jmr.14.0130

Etzioni, A. (1998). Voluntary simplicity: Characterization, select psychological implications, and societal consequences. *Journal of Economic Psychology*, *19*, 619–664. doi: 10.1007/978-3-662-03900-7_1

Feldman, D. B., Davidson, O. B., & Margalit, M. (2015). Personal resources, hope, and achievement among college students: The conservation of resources perspective. *Journal of Happiness Studies*, *16*, 543–560. doi:10.1007/s10902-014-9508-5

Festinger, L. (1954). A theory of social comparison processes. *Human Relations*, *7*, 117–140. doi: 10.1177/001872675400700202

Field, T. (1996). Attachment and separation in young children. *Annual Review of Psychology*, *47*, 541–561. doi: 10.1146/annurev.psych.47.1.541

Finkel, S. E., & Rule, J. B. (1986). Relative deprivation and related psychological theories of civil violence: A critical review. *Research in Social Movements, Conflicts and Change*, *9*, 47–69.

Foa, U. G. (1971). Interpersonal and economic resources. *Science*, *171*, 345–351. doi: 10.1126/science.171.3969.345

Foa, U. G., & Bosman, J. A. M. (1979). Differential factors in need for love. In M. Cook & G. Wilson (Eds.), *Love and attraction*. Oxford, UK: Pergamon. ISBN-13: 978-1483234175

Foa, U. G., & Foa, E. B. (1974). *Societal structures of the mind*. Springfield, IL: Charles C. Thomas.

Foa, E. B., & Foa, U. G. (1976). Resource theory of social exchange. In J. W. Thibaut, J. T. Spence, & R. C. Carson (Eds.), *Contemporary topics in social psychology* (pp. 99–131). Morristown, NJ: General Learning Press.

Folkman, S., Lazarus, R. S., Gruen, R. J., & DeLongis, A. (1986). Appraisal, coping, health status, and psychological symptoms. *Journal of Personality and Social Psychology*, 50, 571. PMID: 3701593

Fredrickson, B. L. (2001). The role of positive emotions in positive psychology: The broaden-and-build theory of positive emotions. *American Psychologist*, *56*, 218. PMCID: PMC3122271

Freese, L., & Burke, P. J. (1994). Persons, identities, and social interaction. *Advances in Group Processes*, *11*, 1–24.

French, J. R. P., Rodgers, W., & Cobb, S. (1974). Adjustment in person-environment fit. In G. V., Coelho, D. A., Hamburg, & J. E. Adams (Eds.), *Coping and adaptation* (pp. 316–334). New York, NY: Basic Books.

Frieswijk, N., Buunk, B. P., Steverink, N., & Slaets, J. P. (2004). The effect of social comparison information on the life satisfaction of frail older persons. *Psychology and Aging*, *19*, 183–190. doi: 10.1037/0882-7974.19.1.183

Fulton Picot, S. J., Youngblut, J., & Zeller, R. (1997). Development and testing of a measure of perceived caregiver rewards in adults. *Journal of Nursing Measurement*, *5,* 33–52. doi: 10.1186/1745-6215-14-216

Galton, F. (1884). Measurement of character. *Fortnightly Review*, *36*, 179–185.

Galvin, R. F., & Lockhart, C. (2012). Limitations on structural principles of distributive justice: The case of discrete idiosyncratic goods. In K. Törnblom & A. Kazemi (Eds.) *Handbook of social resource theory* (pp. 351–371). New York, NY: Springer.

Gangestad, S. W., & Simpson, J. A. (2000). The evolution of human mating: Trade-offs and strategic pluralism. *Behavioral and Brain Sciences*, *23*, 573–587. PMID: 11301543

Gerson, E. M. (1976). On "quality of life". *American Sociological Review*, *41*, 793–806.

Gifford, R., & Cave, M. (2012). The complementary natures of resource theory and interpersonal evaluation theory. In K. Törnblom & A. Kazemi (Eds.) *Handbook of social resource theory* (pp. 223–236). New York, NY: Springer. doi: 10.1007/978-1-4614-4175-5

Goldberg, L. R. (1981). Language and individual differences: The search for universals in personality lexicons. In L. Wheeler (Ed.), *Review of personality and social psychology* (Vol. 2, pp. 141–165). Beverly Hills, CA: Sage.

Goldin, J., & Homonoff, T. (2013). Smoke gets in your eyes: Cigarette tax salience and regressivity. *American Economic Journal: Economic Policy, 5*, 302–336. doi: 10.1257/pol.5.1.302

Grandey, A. A., & Cropanzano, R. (1999). The conservation of resources model applied to work–family conflict and strain. *Journal of Vocational Behavior, 54*, 350–370. doi: 10.1006/jvbe.1998.1666

Greenwald, A. G. (2001, October). *Nothing so practical as a good method*. Invited address at meeting of the Person Memory Interest Group, Coeur d'Alene, ID.

Greenwald, A. G. (2002). *Illusory competition between theories*. Paper presented at annual meeting of the Society of Experimental Psychologists, Berkeley, CA.

Griskevicius, V., Ackerman, J. M., Cantú, S. M., Delton, A. W., Robertson, T. E., Simpson, J. A., . . . Tybur, J. M. (2013). When the economy falters, do people spend or save? Responses to resource scarcity depend on childhood environments. *Psychological Science*, *24*, 197–205. doi: 10.1177/0956797612451471

Griskevicius, V., Delton, A. W., Robertson, T. E., & Tybur, J. M. (2011). Environmental contingency in life history strategies: The influence of mortality and socioeconomic status on reproductive timing. *Journal of Personality and Social Psychology, 100*, 241. doi: 10.1037/a0021082

Griskevicius, V., Tybur, J. M., Delton, A. W., & Robertson, T. E. (2011). The influence of mortality and socioeconomic status on risk and delayed rewards: A life history theory approach. *Journal of Personality and Social Psychology, 100*, 1015. doi: 10.1037/a0022403

Grofman, B. N., & Muller, E. N. (1973). The strange case of relative gratification and potential for political violence: The V-curve hypothesis. *American Political Science Review, 67,* 514–539. doi: 10.2307/1958781

Guimond, S., & Dambrun, M. (2002). When prosperity breeds intergroup hostility: The effects of relative deprivation and relative gratification on prejudice. *Personality and Social Psychology Bulletin, 28,* 900–912. doi: 10.1177/014616720202800704

Gurney, J., & Tierney, K. J. (1982). Relative deprivation and social movements: A critical look at twenty years of theory and research. *Sociological Quarterly, 23,* 33–47. doi: 10.1111/j.1533-8525.1982.tb02218.x

Halbesleben, J. R., Neveu, J. P., Paustian-Underdahl, S. C., & Westman, M. (2014). Getting to the "COR": Understanding the role of resources in conservation of resources theory. *Journal of Management, 40,* 1334–1364. doi: 10.1177/0149206314527130

Harber, K. D., Einev-Cohen, M., & Lang, F. (2008). They heard a cry: Psychosocial resources moderate perception of others' distress. *European Journal of Social Psychology, 38,* 296–314. doi: 10.1002/ejsp.448

Hatfield, E., & Rapson, R. L. (2012). Where do we stand and where do we need to go? In K. Törnblom & A. Kazemi (Eds.), *Handbook of social resource theory* (pp. 435–451). New York, NY: Springer. doi: 10.1007/978-1-4614-4175-5

Heirich, M. (1964). The use of time in the study of social change. *American Sociological Review, 29,* 386–397.

Hill, D. (2006). Class, neoliberal global capital, education and resistance. *Social Change, 36,* 47–76. doi: 10.1177/004908570603600302

Hill, S. E., Prokosch, M. L., DelPriore, D. J., Griskevicius, V., & Kramer, A. (2016). Low childhood socioeconomic status promotes eating in the absence of energy need. *Psychological Science, 27,* 354–364. doi: 10.1177/095679761562190

Hobfoll, S. E. (1988). *The ecology of stress*. Taylor & Francis.

Hobfoll, S. E. (1989). Conservation of resources: A new attempt at conceptualizing stress. *American Psychologist, 44*, 513. PMID: 2648906

Hobfoll, S. E. (2001). The influence of culture, community, and the nested-self in the stress process: Advancing conservation of resources theory. *Applied Psychology, 50*, 337–421. doi: 10.1111/1464-0597.00062

Hobfoll, S. E. (2002). Social and psychological resources and adaptation. *Review of General Psychology, 6*, 307. doi: 10.1037/1089-2680.6.4.307

Hobfoll, S. E., Freedy, J., Lane, C., & Geller, P. (1990). Conservation of social resources: Social support resource theory. *Journal of Social and Personal Relationships, 7*, 465–478. doi: 10.1177/0265407590074004

Hobfoll, S. E., Lilly, R. S., & Jackson, A. P. 1991. Conservation of social resources and the self. In H. O. F. Veiel & U. Baumann (Eds.), *The meaning and measurement of social support: Taking stock of 20 years of research* (pp. 125–141). Washington, DC: Hemisphere.

Hofmann, W., & Van Dillen, L. (2012). Desire: The new hot spot in self-control research. *Current Directions in Psychological Science*, *21*, 317–322. doi: 10.1177/0963721412453587

Hsee, C. K., Yu, F., Zhang, J., & Zhang, Y. (2003). Medium maximization. *Journal of Consumer Research, 30*, 1–14. doi: 10.1086/374702

Huneke, M. E. (2005). The face of the un-consumer: An empirical examination of the practice of voluntary simplicity in the United States. *Psychology & Marketing, 22*, 527–550. doi: 10.1002/mar.20072

International Monetary Fund (IMF). (2017). Source: World Economic Outlook. http://www.imf.org/external/datamapper/NGDPD@WEO/OEMDC/ADVEC/WEOWORLD/ISL

Isaac, L., Mutran, E., & Stryker, S. (1980). Political protest orientations among black and white adults. *American Sociological Review*, *45*, 191–213. doi: 10.2307/2095118

John, O. P., & Srivastava, S. (1999). The Big Five trait taxonomy: History, measurement, and theoretical perspectives. In L.A. Pervin & O. P. John (Eds.) *Handbook of personality: Theory and research* (pp. 102-138). New York, NY: Guilford.

Kahneman, D., & Tversky, A. (1979). Prospect theory: An analysis of decision under risk. *Econometrica*, *47*, 263–292. ISSN: 00129682

Kahneman, D., & Tversky, A. (1984). Choices, values, and frames. *American Psychologist*, *39*, 341–350. doi: 10.1037/0003-066X.39.4.341

Kaplan, H. S., & Gangestad, S. W. (2005). Life history theory and evolutionary psychology. In D. M. Buss (Ed.), *The handbook of evolutionary psychology* (pp. 68–95). Hoboken, NJ: Wiley. doi: 10.1002/9780470939376.ch2

Kelly, C., & Breinlinger, S. (1996). *The social psychology of collective action: Identity, injustice and gender*. London, UK: Taylor & Francis.

Kenrick, D. T., Griskevicius, V., Neuberg, S. L., & Schaller, M. (2010). Renovating the pyramid of needs: Contemporary extensions built upon ancient foundations. *Perspectives on Psychological Science*, *5*(3), 292–314. doi: 10.1177/1745691610369469

Kihlstrom, J. F. (1987). The cognitive unconscious. *Science*, *237*, 1445–1452. doi: 0.1126/science.3629249

Klages, L. (1926). *The science of character (Translated 1932)*. London, UK: Allen & Unwin.

Lane, C., & Hobfoll, S. E. (1992). How loss affects anger and alienates potential supporters. *Journal of Consulting and Clinical Psychology*, *60*, 935.

Lazarus, R. S., & Folkman, S. (1984). Coping and adaptation. In W. D. Gentry (Ed.), *Handbook of behavioral medicine* (pp. 282-325). New York, NY: Guilford.

Lawler, E. E., & Suttle, J. L. (1972). A causal correlational test of the need hierarchy concept. *Organizational Behavior and Human Decision Processes*, *7*, 265–287. doi: 10.1016/0030-5073(72)90018-9

Lee, J. E., Sudom, K. A., & McCreary, D. R. (2011). Higher-order model of resilience in the Canadian forces. *Canadian Journal of Behavioural Science*, *43*, 222–234. doi: 10.1037/a0024473

Lichtenstein, S., & Slovic, P. (2006). The construction of preference: An overview. In S. Lichtenstein & P. Slovic (Eds.), *The construction of preference* (pp. 1–40). New York, NY: Cambridge University Press. ISBN-10: 0521542200

Lorenz, T., Beer, C., Pütz, J., & Heinitz, K. (2016). Measuring psychological capital: Construction and validation of the compound PsyCap scale (CPC-12). *PloS One*, *11*, e0152892. doi: 10.1371/journal.pone.0152892

Luthans, F., Luthans, K. W., & Luthans, B. C. (2004). Positive psychological capital: Beyond human and social capital. *Business Horizons*, *47*, 45–50. doi: 10.1016/j.bushor.2003.11.007

Luthans, F., & Youssef, C. M. (2004). Human, social, and now positive psychological capital management: Investing in people for competitive advantage. *Organizational Dynamics*, *33*, 143–160. doi: 10.1016/j.orgdyn.2004.01.003

Luthans, F., Youssef, C. M., & Avolio, B. J. (2007). *Psychological capital: Developing the human competitive edge* (p. 3). Oxford, UK: Oxford University Press.

MacLeod, A. K., Williams, M. G., & Bekerian, D. A. (1991). Worry is reasonable: The role of explanations in pessimism about future personal events. *Journal of Abnormal Psychology*, *100*, 478–486.

McCrae, R. R. (1989). Why I advocate the five-factor model: Joint analyses of the NEO-PI with other instruments. In D. M. Buss & N. Cantor (Eds.), *Personality psychology: Recent trends and emerging directions* (pp. 237–245). New York: Springer.

Mittal, C., & Griskevicius, V. (2014). Sense of control under uncertainty depends on people's childhood environment: A life history theory approach. *Journal of Personality and Social Psychology*, *107*, 621–37. doi: 10.1037/a0037398

Mittal, C., & Griskevicius, V. (2016). Silver spoons and platinum plans: How childhood environment affects adult health care decisions. *Journal of Consumer Research*, *43*, 636–656. doi: 10.1093/jcr/ucw046

Mittal, C., Griskevicius, V., Simpson, J. A., Sung, S., & Young, E. (2015). Cognitive adaptations to stressful environments: When childhood adversity enhances adult executive function. *Journal of Personality and Social Psychology*, *107*, 621–637. doi: 10.1037/pspi0000028

Moore, D. (2008). Willingness to participate in social action: The beliefs that sustain it and the factors that shape it. *Unpublished manuscript*. Department of Sociology and Anthropology, Hebrew University of Jerusalem, Israel.

Morewedge, C. K., Holtzman, L., & Epley, N. (2007). Unfixed resources: Perceived costs, consumption, and the accessible account effect. *Journal of Consumer Research*, *34*, 459–467. doi: 10.1086/518540

Mullainathan, S., & Shafir, E. (2013). *Scarcity: Why having too little means so much*. New York, NY: Times Books (Henry Holt).

Neiss, M. B., Sedikides, C., & Stevenson, J. (2002). Self-esteem: A behavioural genetic perspective. *European Journal of Personality*, *16*, 351–367. doi: 10.1002/per.456

Neveu, J.-P. (2007). Jailed resources: Conservation of resource theory as applied to burnout among prison guards. *Journal of Organizational Behavior*, *28*, 21–42. doi: 10.1002/job.393

Nuckolls, K. G., Cassel, J., & Kaplan, B. H. (1972). Psychosocial assets, life crisis, and the prognosis of pregnancy. *American Journal of Epidemiology*, *95*, 431–441. doi: 10.1186/1471-2393-13-1

Nyanaponika, T. (2014). *The heart of Buddhist meditation (Satipaṭṭhāna): A handbook of mental training based on the Buddha's way of mindfulness.* San Francisco, CA: Weiser.

Olson, J. M., Roese, N. J., Meen, J., & Robertson, D. (1995). The preconditions and consequences of relative deprivation: Two field studies. *Journal of Applied Social Psychology*, *55*, 944–964. doi: 10.1111/j.1559-1816.1995.tb02384.x

Parke, R. D., Ornstein, P. A., Rieser, J. J., & Zahn-Waxler, C. E. (1994). *A Century of Developmental Psychology*. American Psychological Association. ISBN: 978-1-55798-238-4

Peterson, C. (2000). The future of optimism. *American Psychologist*, *55*(1), 44. doi: 10.1037/0003-066X.55.1.44

Pettigrew, T. F., Christ, O., Wagner, U., Meertens, R. W., van Dick, R., & Zick, A. (2008). Relative deprivation and intergroup prejudice. *Journal of Social Issues*, *64*, 385–401. doi: 10.1111/j.1540-4560.2008.00567.x

Runciman, W. G. (1966). *Relative deprivation & social justice: A study of attitudes to social inequality in twentieth-century England*. Routledge & Kegan Paul. ISBN-13: 978-0710039231

Sabbagh, C., & Shlomit, L. (2012). Toward an expansion of resource exchange theory: A facet approach. In K. Törnblom & A. Kazemi (Eds.), *Handbook of social resource theory*. New York, NY: Springer. doi: 10.1007/978-1-4614-4175-5

Savickas, M. L. (2003). Toward a taxonomy of human strengths: Career counseling's contribution to positive psychology. In W. B. Walsh (Ed.), *Contemporary topics in vocational psychology: Counseling psychology and optimal human functioning* (pp. 229-249). Mahwah, NJ: Lawrence Erlbaum Associates.

Sicherman, N., Loewenstein, G., Seppi, D., & Utkus, S. (2016). Financial attention. *Review of Financial Studies*, *29*, 863–897. doi: 10.1093/rfs/hhv073

Shafir, E., Simonson, I., & Tversky, A. (1993). Reason-based choice. *Cognition*, *49*, 11–36. doi: 10.1016/0010-0277(93)90034-S

Shah, A. K., Mullainathan, S., & Shafir, E. (2012). Some consequences of having too little. *Science*, *338*, 682–685. doi: 10.1126/science.1222426

Shah, A. K., Shafir, E., & Mullainathan, S. (2015). Scarcity frames value. *Psychological Science, 26,* 402–412. doi: 10.1177/0956797614563958

Shapiro, G. K., & Burchell, B. J. (2012). Measuring financial anxiety. *Journal of Neuroscience, Psychology, and Economics, 5,* 92–103. doi: 10.1037/a0027647

Simpson, J. A., Griskevicius, V., Kuo, S. I., Sung, S., & Collins, W. A. (2012). Evolution, stress, and sensitive periods: The influence of unpredictability in early versus late childhood on sex and risky behavior. *Developmental Psychology, 48,* 674. doi: 10.1037/a0027293

Slovic, P., Finucane, M., Peters, E., & MacGregor, D. G. (2002). The affect heuristic. In T. Gilovich, D. Griffin, & D. Kahneman (Eds.), *Heuristics and biases: The psychology of intuitive judgment* (pp. 397–420). New York, NY: Cambridge University Press. ISBN-10: 0521796792

Smith, H., Pettigrew, T. F., Pippin, G., & Bialosiewicz, S. (2012). Relative deprivation: A theoretical and meta-analytic critique. *Personality and Social Psychology Review, 16,* 203–232. doi: 10.1177/1088868311430825

Stangl, W. (1993). Personality and the structure of resource preferences. *Journal of Economic Psychology, 14,* 1–15. doi: 10.1016/0167-4870(93)90037-L

Stangl, W. (1989). The structure of resource preferences. *Archiv für Psychologie, 141,* 139–154. doi: 10.1016/0167-4870(93)90037-L

Stearns, S. C., Allal, N., & Mace, R. (2008). Life history theory and human development. In C. Crawford & D. Krebs (Eds.), *Foundations of evolutionary psychology* (pp. 47–69). New York, NY: Taylor & Francis. ISBN-13: 978-0805859577

Taylor, S. E., & Seeman, T. E. (1999). Psychosocial resources and the SES-health relationship. *Annals of the New York Academy of Sciences, 896,* 210–225. PMID: 10681899

Thaler, R. H. (1985). Mental accounting and consumer choice. *Marketing Science, 4,* 199–214. ISSN: 07322399

Thaler, R. H., Tversky, A., Kahneman, D., & Schwartz, A. (1997). The effect of myopia and loss aversion on risk taking: An experimental test. *Quarterly Journal of Economics, 112*, 647–661. doi: 10.1162/003355397555226

The Economist (2008). Cracks in the crust. Retrieved from http://www.economist.com/node/12762027

Tom, S. M., Fox, C. R., Trepel, C., & Poldrack, R. A. (2007). The neural basis of loss aversion in decision-making under risk. *Science, 315*, 515–518. doi: 10.1126/science.1134239

Turner J. H. (2012) The structural bases of resource distribution. In K. Törnblom & A. Kazemi (Eds.), *Handbook of social resource theory* (pp. 161–177). New York, NY: Springer. doi: 10.1007/978-1-4614-4175-5_10

Turner, B. S., & Rojek, C. (2001). *Society and culture: Principles of scarcity and solidarity*. London, UK: Sage.

Tversky, A., & Griffin, D. (1991). Endowment and contrast in judgments of well-being. In F. Strack, M. Argyle, & N. Schwarz (Eds.), *International series in experimental social psychology, Vol. 21. Subjective well-being: An interdisciplinary perspective* (pp. 101–118). Elmsford, NY: Pergamon.

Tversky, A., & Kahneman, D. (1981). The framing of decisions and psychology of choice. *Science, 211*, 453–458. ISSN: 0036-8075

Tversky, A., & Kahneman, D. (1991). Loss aversion in riskless choice: A reference-dependent model. *Quarterly Journal of Economics, 106*, 1039–1061. doi: 10.2307/2937956

Tversky, A., Slovic, P., & Kahneman, D. (1990). The causes of preference reversal. *American Economic Review, 80*, 204–217.

Törnblom, K., & Kazemi, A. (2012). Some conceptual and theoretical issues in resource theory of social exchange. In K. Törnblom & A. Kazemi (Eds.), *Handbook of social resource theory* (pp. 33–64). New York, NY: Springer. doi: 10.1007/978-1-4614-4175-5

Veblen, T. (2007). *Theory of the leisure class.* Oxford, UK: Oxford University Press.

Veenhoven, R. (1995). The cross-national pattern of happiness: Test of predictions implied in three theories of happiness. *Social Indicators Research, 34,* 33–68. doi: 10.1007/BF01078967

Wahba, M. A., & Bridwell, L. G. (1976). Maslow reconsidered: A review of research on the need hierarchy theory. *Organizational Behavior and Human Decision Processes, 15,* 212–240. doi: 10.1016/0030-5073(76)90038-6

Walker, I., & Pettigrew, T. F. (1984). Relative deprivation theory: An overview and conceptual critique. *British Journal of Social Psychology, 23,* 301–310. doi: 10.1111/j.2044-8309.1984.tb00645.x

Walker, I., & Smith, H. J. (Eds.) (2002). *Relative deprivation: Specification, development, and integration*. Cambridge University Press. ISBN: 9780521180696

Walsh, F. (Ed.) (2008). *Spiritual resources in family therapy*. New York, NY: Guilford.

Wells, J. D., Hobfoll, S. E., & Lavin, J. (1997). Resource loss, resource gain, and communal coping during pregnancy among women with multiple roles. *Psychology of Women Quarterly, 21,* 645–662. doi: 10.1111/j.1471-6402.1997.tb00136.x

Wilensky, H. L. (1963). The moonlighter: A product of relative deprivation. *Industrial Relations, 3,* 105–124. doi: 10.1111/j.1468-232X.1963.tb00812.x

Wiley, J. F., Bei, B., Bower, J. E., & Stanton, A. L. (2017). Relationship of psychosocial resources with allostatic load: A systematic review. *Psychosomatic Medicine, 79,* 283–292. doi: 10.1097/PSY.0000000000000395

Wosinski, M. (1988). Social comparison and experience of injustice. *Journal of Economic Psychology, 9,* 359–367. doi: 10.1016/0167-4870(88)90040-2

Yang, H., Ramasubramanian, S., & Oliver, M. B. (2008). Cultivation effects on quality of life indicators: Exploring the effects of American television consumption on feelings of relative deprivation in South Korea and India. *Journal of Broadcasting and Electronic Media, 52,* 247–267. doi: 10.1080/08838150801992060

Zoogah, D. B. (2010). Why should I be left behind? Employees' perceived relative deprivation and participation in development activities. *Journal of Applied Psychology*, *95*, 159–179. doi: 10.1037/a0018019