Fachbereich Erziehungswissenschaften und Psychologie der Freien Universität Berlin

The Development of Prosocial Behavior: Integrating Psychological, Economic and Evolutionary Perspectives

Dissertation

Vorgelegt von

Dipl.-Psych. Michaela Gummerum

Erstgutachterin: PD Dr. Monika Keller

Zweitgutachter: Prof. Dr. Herbert Scheithauer

Berlin, Mai 2005

Datum der Disputation: 5. September 2005

To my grandmother Gertrud Smasal and my great-aunt Trude Senft for all their prosocial behavior towards me.

ACKNOWLEDGEMENTS

Pursuing a doctoral degree is a cooperative endeavour. This thesis benefited immensely from the many, many instances of prosocial behavior by colleagues, friends, and family. Here is the place to thank all those who devoted their time, brainpower, telephone units, and various other resources to help me start, continue, and finally finish this dissertation.

First and foremost, I want to thank Monika Keller. The term "supervisor" certainly cannot capture all the things she has done for me and all the roles she has played in my life over the last years. Not only has she been my collaborator in all the studies presented in this dissertation, a provider of brilliant ideas and valuable feedback, an enthusiastic advisor and considerate critic, but also a good friend, running and swimming partner, and travel companion. Working with and learning from her has been a great and stimulating experience. I cannot thank her enough for all the support she gave me (both practical and psychological) and the trust she placed in me right from the start.

This thesis owes a lot to the universal knowledge of Masanori Takezawa who is an expert in (almost) all the things I will discuss on the following 200 pages and a collaborator in the two studies I will present there. Masanori did a fantastic job in providing constructive input at all stages of this dissertation. Herbert Scheithauer from the Free University Berlin has been an enthusiastic and very helpful supervisor. Many thanks for his interest, time, and support.

This dissertation is part of the research conducted at the Center for Adaptive Behavior and Cognition (ABC) at the Max Planck Institute for Human Development in Berlin. I want to thank Gerd Gigerenzer, the director of ABC, for giving me the chance to work there as predoctoral research fellow. These three years have been an exciting and truly intellectually inspiring time. I learned so much at ABC, and hopefully this is also reflected in this dissertation, which summarizes research I conducted there. This "learning effect" is, of course, also due to my fantastic colleagues at ABC, who were never tired of giving valuable feedback and producing stimulating food-for-thought. Their friendship made working at ABC such a unique experience.

This thesis probably would not have seen the light of day without the committed and always reliable work of research assistants and interns, past and present. I want to particularly thank Jutta Wittig and Maren Hoffmann for their great help in data collection and coding, their stress resistance, and their patience. Furthermore, I want to thank Silke Atmaca, Susanne

Baum-Deierlein, Agnes Brandt, Nellie Hankonen, Kerstin Herr, Astrid Kröger, Abiba Saibou, Sonja Schulze, Wiebke Seefeldt, Selver Temur-Erman, and Yvonne Treißl. I am very grateful to all the participants of the empirical studies, especially to the parents who allowed their children to take part and to the headmasters and teachers of the *Französische Gymnasium*, *Rothenburg Grundschule*, and *Grundschule an der Bäke* in Berlin.

Erna Schiwietz and her team have skilfully transcribed the videotaped group discussions that are the basis for the analyses conducted in Chapter 3. I want to thank them very much for the time and effort they invested in this work. Furthermore, I want to thank Gregor Caregnato for much appreciated help in recruiting the adult participants for the study reported in Chapter 4. Anita Todd and Anna Kuhlen did a magnificent job in finding all my English spelling and grammatical mistakes – all the errors that still remained are, of course, mine. Many thanks also to Anja Dieckmann who has shared her experience about writing and formatting a thesis.

I am very grateful to Paul Baltes for accepting me to the International Max Planck Research School LIFE. Thanks to all the fellows and faculty who provided feedback during presentations and on earlier versions of this dissertation, particularly to Toni Antonucci, Judy Deloache, and Richard Gonzalez, and to Julia Delius, the LIFE organizer in Berlin.

On a more personal level, I want to thank my parents Brigitte and Peter Gummerum, who have always been supportive of my plans to pursue a PhD and did not mind that our phone conversations became increasingly monothematic over the last few months. The same is true for my friends, who were of great psychological assistance during my inevitable bleak phases. I want to especially thank Stefan Krauß, my motivation guru, who can find the light at the end of even the longest and darkest tunnel.

Yaniv Hanoch has contributed more to this dissertation than I can express in a few sentences. He provided the vital ingredients for every successful PhD – massages, a round-the-clock transatlantic telephone support service for stressed predocs, and vitamins in the form of delicious salads - read numerous earlier versions of this dissertation without complaint, and always stood by me through the ups and downs of these predoctoral years. Thank you so much for all your encouragement, support, and, most importantly, your patience!

TABLE OF CONTENTS

CHAPTER 1	
Everything You Always Wanted to Know About Prosocial Behavior in Economics and Psychology	7
Introduction	7
The economic perspective: Game theory and experimental economics	9
The psychological perspective: Social and developmental psychology	20
Summary and outlook	34
CHAPTER 2 What's Moral Reasoning Got to Do with It? The Prosocial Decisions of Individuals and Groups	38
Moral reasoning and prosocial action	38
Group decision making and moral reasoning	39
Experiment and hypotheses	40
Method	42
Results	44
Discussion	57
CHAPTER 3 Perspective-Taking or Social Heuristics? Persuasion in a Group Discussion	62
Introduction	62
Persuasion in individuals and groups	63
Persuasion in group decision making	64
The validity of persuasive arguments	68
Algorithms of social life	76
Summary of hypotheses	81
Experiment	82
Results for the dictator game	88
Results for the ultimatum game	106
Discussion	116

CHAPTER 4 Us on Them and Ovid Pro Ove?	
Us or Them and Quid Pro Quo? Prosocial Behavior in an Intergroup Situation	123
Introduction	123
Reciprocity and ingroup favoritism as adaptive social algorithms for prosocial decisions	124
Empirical evidence for reciprocity and ingroup favoritism	133
The prosocial heuristic	139
Social preferences revisited	141
Hypotheses and experimental design	143
Method	146
Results	155
Discussion	170
CHAPTER 5 Quo vadimus?	
General Discussion and Outlook	178
Summary	178
General discussion	180
	40=
REFERENCES	187
APPENDIX	208
Social Value Orientation Questionnaire (German Version)	209
Deutsche Zusammenfassung (German Summary)	220
• *	227
Erklärung Curriculum Vitae	227
Cultivuluii VIIAC	∠∠9