CONTENTS

List	t of contributors	xii
	Introduction Oliver C. Schultheiss and Pranjal H. Mehta	1
	CTION 1 storical and methodological issues	5
1	History of social neuroendocrinology in humans Allan Mazur	7
2	Hormone measurement in social neuroendocrinology: a comparison of immunoassay and mass spectroscopy methods Oliver C. Schultheiss, Gelena Dlugash, and Pranjal H. Mehta	26
3	Reproducibility in social neuroendocrinology: past, present, and future Oliver C. Schultheiss and Pranjal H. Mehta	41
	CTION 2 ominance and aggression	65
4	Leveraging seasonality in male songbirds to better understand the neuroendocrine regulation of vertebrate aggression Douglas W. Wacker	67

5	Behavioral and neuroendocrine plasticity in the form of winner and loser effects Nathaniel S. Rieger, Matthew J. Fuxjager, Brian C. Trainor, Xin Zhao, and Catherine A. Marler	81
6	The endocrinology of dominance relations in non-human primates Sean P. Coyne	99
7	The dual-hormone approach to dominance and status-seeking Amar Sarkar, Pranjal H. Mehta, and Robert A. Josephs	113
8	Social neuroendocrinology of human aggression: progress and future directions Justin M. Carré, Emily Jeanneault, and Nicole Marley	133
	CTION 3 Cial affiliation	147
9	Social endocrinology in evolutionary perspective: function and phylogeny Nicholas M. Grebe and Steven W. Gangestad	149
10	Organizational and activational effects of progesterone on social behavior in female mammals Alicia A. Walf and Cheryl A. Frye	163
11	The neuroendocrinological basis of human affiliation: how oxytocin coordinates affiliation-related cognition and behavior via changing underlying brain activity Bastian Schiller and Markus Heinrichs	193
12	Oxytocin and human sociality: an interactionist perspective on the "hormone of love" Jonas P. Nitschke, Sonia A. Krol, and Jennifer A. Bartz	205
13	Affiliative or aggressive? The role of oxytocin in antisocial behaviour through the lens of the social salience hypothesis Leehe Peled-Avron and Simone G. Shamay-Tsoory	224

SECTION 4 Pair bonding, reproduction, and parenting		237
14	Functional roles of gonadal hormones in human pair bonding and sexuality James R. Roney	239
15	Organizational effects of hormones on sexual orientation Kevin A. Rosenfield, Khytam Dawood, and David A. Puts	256
16	Hormones and close relationship processes: neuroendocrine	
	bases of partnering and parenting	281
	Robin S. Edelstein and Kristi Chin	
17	T1 C1	
17	The many faces of human caregiving: perspective on flexibility of the parental brain, hormonal systems, and parenting behaviors	
	and their long-term implications for child development	298
		290
	Eyal Abraham and Ruth Feldman	
18	The social neuroendocrinology of pregnancy and breastfeeding	
	in mothers (and others)	318
	Jennifer Hahn-Holbrook and Colin Holbrook	
19	The neuroendocrinology of fatherhood Patty X. Kuo and Lee T. Gettler	333
	TION 5	
Co	gnition and emotion	355
20	Sex hormonal effects on brain lateralization	357
	Markus Hausmann and D. Michael Burt	337
04		
41	Estrogens and androgens in the prefrontal cortex: relevance	
	for cognition and decision-making	371
	Elizabeth Hampson	
22	Sex hormones and economic decision making in the lab: a review	
	of the causal evidence	391
	Anna Dreber and Maonus Iohannesson	39)

23	Emotional processing and sex hormones Malin Gingnell, Jonas Hornung, and Birgit Derntl	403
24	Hormonal modulation of reinforcement learning and reward-related processes – a role for 17ß-estradiol, progesterone and testosterone Esther K. Diekhof, Luise Reimers, and Sarah K. C. Holtfrerich	420
25	The impact of psychosocial stress on cognition Oliver T. Wolf	441
26	Intra- and interindividual differences in cortisol stress responses Sandra Zänkert and Brigitte M. Kudielka	454
	TION 6 velopmental aspects	477
27	Stress and social development in adolescence in a rodent model Travis E. Hodges and Cheryl M. McCormick	479
28	Oxytocin and vasopressin systems in the development of social behavior Elizabeth A. D. Hammock	504
29	The social neuroendocrinology and development of executive functions Rosemarie E. Perry, Eric D. Finegood, Stephen H. Braren, and Clancy Blair	530
30	Sensitive periods of development and the organizing actions of gonadal steroid hormones on the adolescent brain Kalynn M. Schulz and Zoey Forrester-Fronstin	544
31	The social biopsychology of implicit motive development Martin G. Köllner, Kevin T. Janson, and Kira Bleck	568
32	Interventions, stress during development, and psychosocial adjustment Leslie E. Roos, Kathryn G. Beauchamp, Jessica Flannery, Sarah Horn, and Philip A. Fisher	586
33	Developmental trajectories of HPA-HPG dual-axes coupling: implications for social neuroendocrinology Ellen Zakreski, Andrew Richard Dismukes, Andrea Tountas, Jenny Mai Phan, Shannin Nicole Moody, and Elizabeth Anne Shirtcliff	608

	SECTION 7 Mental and physical health	
34	Neuroendocrinological aspects of social anxiety and aggression-related disorders Dorien Enter, Moniek H. M. Hutschemaekers, and Karin Roelofs	635
35	The social neuroendocrinology of trauma and post-traumatic stress disorder Amy Lehrner and Rachel Yehuda	656
36	Attachment and depression: is oxytocin the shared link? Allison M. Perkeybile and C. Sue Carter	674
37	Sexual dimorphism in drug addiction: an influence of sex hormones Linda I. Perrotti, Brandon D. Butler, and Saurabh S. Kokane	694
38	Neuroendocrine-immune interactions in health and disease Nicolas Rohleder	717
39	The social neuroendocrinology of athletic competition David A. Edwards and Kathleen V. Casto	730
Ind	en e	74