

PREFACE



A cherished bit of apocrypha about Marvin Minsky, a founder of artificial intelligence:

About twenty years ago, he assigned a graduate student a seemingly tractable problem for a summer project: connect a camera to a computer and make the computer describe what it sees [...] Despite machine vision's enormous progress, that problem has still not been solved.

—Hurlbert & Poggio (1988, p. 218)

In the summer of 2010 I thought I could write a book on mate choice in a mere two years. My research program on the topic was broad and aspired to be integrative in the tradition of the scientists I trained with: Peter Marler, Chris Evans, and Mike Ryan. I wanted to figure out *why* living things are sexually stimulated by some things but not others, and *how* one individual's object of disgust is another's object of desire. In more clinical terms, my long-term goal was (and remains) to identify the mechanistic underpinnings of variation in mating preference and use those underpinnings to test explicit hypotheses about evolutionary patterns. This meant I needed to straddle sensory ecology, animal behavior, and evolutionary genetics. Being broad inevitably means having to sacrifice some depth; for me, part of the trade-off was not being able to fully immerse myself in any one of these disciplines, and another was a sometimes myopic focus on small freshwater fishes. With this book, I wanted to both give myself a comprehensive education on what is known about mate choice, and share that education with anyone interested. I also hoped to shake up a field that yielded so many exciting ideas and so much interesting data over the past 30 years yet nevertheless has managed to spend that time in a conceptual rut. Over the past three decades, advances in machine vision have brought us self-driving cars and automated face recognition. The immense corpus of work on mate choice over that same time period has not yielded comparable disruptions to the thinking that was popular in the 1980s. I thought a comprehensive work that encompassed the whole sweep of mate-choice research would spark connections among fields and study systems.

For this book to be genuinely integrative, and not just a collection of superficial reviews, I needed to be on intimate terms with a massive literature that ranged from the protein structure of odorant receptors, to the response of discrete brain regions to attractive faces, to the neurobiology of foot fetishes. I came into this endeavor knowing that my expertise was an inch deep and possibly less than a mile wide. I felt comfortable taking this on as a traveler's guide rather than a technical manual, designed to get people to draw novel connections with fields they didn't normally think about. As the months progressed I developed a stronger appreciation both for the need for a book that cut across taxonomic and methodological silos and for the magnitude of the scholarly effort required to do those silos justice. I wanted to make sure I had a sufficient enough understanding of each of the subdisciplines to be able to make a cogent critical analysis of their relationships to the broader framework of mate choice. Sifting through the literature led down a Borgesian labyrinth of exponentially expanding citations.

A delightful labyrinth, however—there is so much work out there that has been ignored by the scholarly world I know, and so much to discover that is illuminating or just amazing. In the amazing lie the pitfalls, though. Hurlbert and Poggio (1988) are frequently cited as authoritative sources for the Marvin Minsky story, but the secondary sources omit the “apocrypha” bit. I may have been fool enough to think that I could synthesize mate choice in two years (while maintaining a funded and aspirationally integrative experimental research program; the U.S. National Science Foundation nurtured many of the ideas herein), but Minsky surely knew better than to think he could solve machine vision in a summer. Yet the “cherished bits of apocrypha” are, quite literally, infectious: appealing and hard to source, they propagate in the literature and take root with secondary citations.

The mate-choice literature is full of poorly sourced “cherished bits,” which I have done my best to elucidate, surely committing Marvin Minskys of my own along the way. The scholarly due diligence has been overwhelming, even as I have striven to keep up with the exploding literature. About a third of the studies I cite here have been published since I started this book. Fortunately, some of these have included broad and synthetic surveys of several key areas, which have proven invaluable in shaping my thinking and in summarizing important topics. Many of these are featured in the “Additional reading” section at the end of each chapter.

I am especially grateful to the students and postdocs in my lab, who have been patient with my book-writing solipsism and have provided an endless source of energy and inspiration. The early stages of the book were heavily influenced by discussions of drafts with graduate students Chuck Carlson,

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and Jamila, themselves the product of unlikely choices, were respectively a toddler and a zygote when I started this book. They have been a constant reminder of the important things in life, and as insightful enthusiasts of aesthetics and animals respectively they have helped me finish it.

This book is dedicated to Rhonda Struminger, not only for proving that imprudent mating decisions can yield offspring of tremendous Quality, but for her unflagging support—moral, intellectual, and logistical—over these last years as this book has come to fruition.

Finally, this whole book owes a debt to Mike Ryan, who initially encouraged me to propose this book and whose integrative perspective on mate choice has heavily influenced mine. I have striven to meet his standards of writing and scholarship, and this book is a tribute to his insight and guidance.