Graphing Jane Austen

The Evolutionary Basis of Literary Meaning

Joseph Carroll, Jonathan Gottschall, John A. Johnson, and Daniel J. Kruger

	Elizabeth	Emma	Catherine	Marianne
Extraversion	0.68	1.18	0.57	1.36
Agreeableness	0.49	0.00	0.92	-0.06
Conscientiousness	0.80	-0.23	-0.29	-1.84
Stability	0.95	0.33	-0.35	-1.26
Openness	0.88	0.63	0.53	1.53

Cognitive Studies in Literature and Performance

GRAPHING JANE AUSTEN

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Literature, Science, and a New Humanities
Jonathan Gottschall

Engaging Audiences
Bruce McConachie

The Public Intellectualism of Ralph Waldo Emerson and W.E.B. Du Bois
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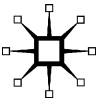

GRAPHING JANE AUSTEN

Softcover reprint of the hardcover 1st edition 2012 978-1-137-00240-2

First published in 2012 by
PALGRAVE MACMILLAN®
in the United States—a division of St. Martin's Press LLC,
175 Fifth Avenue, New York, NY 10010.

Where this book is distributed in the UK, Europe and the rest of the world, this is by Palgrave Macmillan, a division of Macmillan Publishers Limited, registered in England, company number 785998, of Houndmills, Basingstoke, Hampshire RG21 6XS.

Palgrave Macmillan is the global academic imprint of the above companies and has companies and representatives throughout the world.

ISBN 978-1-349-43377-3 ISBN 978-1-137-00241-9 (eBook)

DOI 10.1057/9781137002419

Library of Congress Cataloging-in-Publication Data

Graphing Jane Austen : the evolutionary basis of literary meaning / Joseph Carroll…[et al.].
p. cm.—(Cognitive studies in literature and performance)
Includes bibliographical references.

1. Characters and characteristics in literature—Statistics. 2. English fiction—19th century—History and criticism. 3. English fiction—20th century—History and criticism. 4. Austen, Jane, 1775–1817—Characters. 5. Hardy, Thomas, 1840–1928—Characters. 6. Human behavior in literature. 7. Reader-response criticism. I. Carroll, Joseph, 1949– II. Title: Evolutionary basis of literary meaning.

PR878.C47G73 2012
823'.80927—dc23 2011042318

A catalogue record of the book is available from the British Library.

Design by Newgen Imaging Systems (P) Ltd., Chennai, India.

First edition: May 2012

10 9 8 7 6 5 4 3 2 1

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Acknowledgments

Several people have contributed helpful comments on part or all of this book while it was in progress, notably Brian Boyd, Gwendolyn Carroll, Paula Carroll, Mark Collard, Ellen Dissanayake, Denis Dutton, Harold Fromm, John Knapp, Richard Kopley, Matthew McAdam, Jessica McKee, Gary Saul Morson, and Michael Ryan. David Michelson went through the whole manuscript twice, at different stages. All these readers made constructive criticisms and offered welcome encouragement, but of course none is responsible for the contentions in the book.

Introduction

The Purpose of this Study

The research described in this book is designed to help bridge the gap between science and literary scholarship. Building on findings in the evolutionary human sciences, we constructed a model of human nature and used it to illuminate the evolved psychology that shapes the organization of characters in nineteenth-century British novels (Austen to Forster). Using categories from the model, we created a web-based survey and induced hundreds of readers to give numerical ratings to the attributes of hundreds of characters. Participants also rated their own emotional responses to the characters. Our findings enable us to draw conclusions on several issues of general interest to literary scholars—especially the determinacy of literary meaning, the interaction between gendered power relations and the ethos of community, and the evolutionary basis for telling stories and listening to them. The data on novels of the whole period provide an interpretive base line against which we graph the distinctive features of the novels in two case studies: all the novels of Jane Austen, and Thomas Hardy's *The Mayor of Casterbridge*.

This kind of research crosses several boundaries not usually crossed in literary study. Readers might thus reasonably wonder what to make of it—why we did it, and how we hope it might influence the whole field of literary study. To answer such questions, in the next section of the introduction, we locate our effort in a historical and theoretical context that includes the development of modern empirical methods, the conflict between "the two cultures," the decline of the humanities, the growth of the evolutionary human sciences, and the emergence of "literary Darwinism" as a distinct school of literary theory—part of a "third culture" that integrates research in the life sciences, the social sciences, and the humanities. In the conclusion

to the book, we compare the research in *Graphing Jane Austen* with work in other schools of literary theory that take up similar subjects, engage similar themes, adopt similar ideas, or use similar methods.

Moving Past the Two Cultures

Steven Weinberg, a Nobel Laureate in Physics, makes a compelling case that the most important development in knowledge since ancient Greek philosophy consists of deploying empirical methods.[1] Those methods include formulating testable hypotheses, producing quantitative evidence, and using that evidence to falsify or confirm hypotheses. Researchers began to rely on empirical methods first in the Renaissance, roughly at the same time that humanists began both to recuperate ancient literature and to develop a distinctively modern form of literary culture. In some ways, science and the humanities have since then influenced each other. Scientific questions have emerged out of large imaginative and philosophical paradigms. And the humanities have absorbed information from science, adjusting their imaginative vision to the changing world picture produced by scientific discovery. Nonetheless, in method science and the humanities have remained fundamentally distinct.

In contrast to the culture of modern science, scholarship in the humanities progresses, if at all, by way of argument and rhetoric. More often than not, humanists believe that rhetoric operates within a qualitative realm radically incompatible with quantitative forms of evidence. In its most scholarly guise, traditional literary study aims at producing objective textual and historical information. Scholars weigh alternative explanations against the evidence. In the hands of a judicious scholar, this method can produce valuable results. Still, it has two serious deficiencies: (1) it contains no means for combating "confirmation bias"—the selective use of evidence to confirm favored hypotheses; and (2) it contains no means for settling differences between two or more plausible but incompatible hypotheses. In *The Two Cultures and the Scientific Revolution* (1959), C. P. Snow charged literary scholars with ignorance of scientific facts, but the absence of neutral, objective methods for assessing the validity of ideas is a deeper, more serious problem than the ignorance of particular facts.

All efforts at interpreting evidence are encompassed within larger theoretical paradigms.[2] In literary scholarship, those paradigms have often been speculative and rhetorical in character. During roughly the first two-thirds of the twentieth century, the most common

interpretive frameworks available to literary study included quasi-scientific systems of thought drawn from outside the realm of humanistic culture—most prominently from Marxism (sociology and economics), Freudianism and Jungianism (psychology and anthropology), and Structuralism (linguistics and anthropology). The majority of literary critics did not clearly or unequivocally subscribe to any of these paradigms. Instead, most critics operated as eclectic free agents, spontaneously gleaning materials for interpretive models from the whole field of human discourse—from science, literature, philosophy, social science, history, current events, and common knowledge. This method can be designated "pluralistic humanism." The method is something like that of the Bower Bird, an artistic scavenger who carefully combs his territory, looking for shells, feathers, stones, or other bits of brightly colored material with which to decorate his bower, interrupted only by the necessities of eating, mating, and attacking and disrupting the artistic constructions of his competitors.

Old-fashioned literary Marxism, Freudianism, and structuralism sought to produce rhetorical "knowledge"—that is, interpretive commentary—in rough concord with a conceptual order supposed by its proponents to possess some solid grounding in scientific fact. Practitioners of pluralistic humanism, in contrast, typically conceived of their work as an alternative and autonomous order of knowledge—an order imaginative, subjective, and qualitative—and thus independent of scientific knowledge and incommensurate with it. In practice, it is not possible for any humanist to operate in a realm untouched by scientific information, but the claim for autonomy left the individual humanist free to pick and choose his rhetorical materials with no constraint other than that exercised by his or her own individual sense of what was plausible or rhetorically striking.

Over the past four decades or so, all these older forms of literary criticism have been partially assimilated to a new critical episteme and partially superseded by it. The new episteme is called by various names: "poststructuralism," "postmodernism," "cultural constructivism," "cultural critique," "critical theory," or most broadly and simply, "Theory." For convenience, we shall refer to the new episteme as "poststructuralism" but ask readers to understand that term in its broadest signification, including in it the whole array of attitudes and assumptions associated with the various alternative designations. Whatever one chooses to call it, the new episteme has incorporated Freudianism and Marxism (particularly in their Lacanian and Althusserian forms), but it has also overtly rejected the idea that empirical research can produce "objective" knowledge. Instead, it has

envisioned science itself as a form of ideologically driven rhetoric, and it has thus subordinated scientific forms of knowledge to the kind of speculative theory that more typically characterizes the humanities. As Stanley Aronowitz puts it, science "is no more, but certainly no less, than any other discourse. It is one story among many stories." Within the poststructuralist frame of thinking, it is not permissible to say that a given scientific idea is "true" or that it "corresponds" closely to a "reality" that exists independently of the human mind. Consider, for instance, Gowan Dawson's commentary on efforts to integrate evolutionary psychology with studies in the humanities. As Dawson rightly observes, adopting a "realist" or "objectivist" approach to science "undermines the entire premise of recent literature and science studies." In his own work and that of his colleagues, Dawson explains, conceptions of science as an "intellectually authoritative mode of knowledge" have "long been proscribed."[3]

In literary studies, the key to subordinating science to rhetoric can be found in deconstructive philosophy. As practiced by Jacques Derrida, Paul de Man, J. Hillis Miller, Geoffrey Hartman, and their associates, deconstruction envisions all human cognition as operating within an all-encompassing realm of unstable and self-undermining semiotic activity. Deconstruction is no longer very prominent as a distinct school, but it remains a core element in poststructuralist thinking. The epistemological skepticism for which deconstruction provided a rationale was a theoretical prerequisite for the political criticism that has dominated literary studies since the 1980s. In the absence of progressive, empirical knowledge, all signs, even scientific signs, can be conceptualized as media for power politics. Current political criticism typically interprets discursive formations as symbolic enactments of a struggle between ruling social groups and subversive forms of group social identity, especially those of gender, race, and class.

One often now hears that "Theory," meaning poststructuralist theory, is a thing of the past.[4] In reality, most literary scholars have not left poststructuralist theory behind but have only internalized it. The categories they use derive chiefly from Foucauldian traditions: versions of Marxism and Freudianism filtered through deconstructive epistemology. Despite the many eulogies pronounced over the corpse of "Theory," in a survey of citations of books in the humanities in the year 2007, the most frequently cited authors were either the main luminaries in poststructuralist theory or thinkers who have been assimilated to the poststructuralist paradigm, especially Marxists, Freudians, and contributors to "the cultural construction of

science."[5] The top three, in this order, were Foucault, Bourdieu, and Derrida. The top ten included Habermas, Judith Butler, and Bruno Latour. Freud and Deleuze ranked eleventh and twelfth. A group of 37 authors whose books had been cited 500 times or more included Marx, Nietzsche, Heidegger, Barthes, and Lacan. Perhaps needless to say, it did not include Darwin, Huxley, Edward O. Wilson, Sarah Hrdy, Robin Dunbar, Steven Pinker, or any other writer closely associated with evolutionary thinking in the human sciences.

Louis Menand, a distinguished senior literary scholar and an advocate of poststructuralist theory, recognizes that younger scholars in the humanities can declare themselves "post-theory" only because they have so completely internalized its axioms:

> There is a post-theory generation, bristling with an "it's all over" attitude, but when people of my generation look at the post-theory people, we recognize them immediately. They're the theory people. And their attitude is not "You've got it all wrong." It's "Stop repeating yourselves; we know this stuff better than you do."
>
> The profession is not reproducing itself so much as cloning itself. One sign that this is happening is that there appears to be little change in dissertation topics in the last ten years. Everyone seems to be writing the same dissertation, and with a tool kit that has not altered much since around 1990.[6]

Though Menand himself thinks "Theory" is profoundly right, he deplores the way in which younger scholars simply take it as a given. They seem unable to think critically about the fundamental ideas that guide their practice.

In short, for decades now nothing much has really changed in the way most humanists think. For close to two decades, though, the humanities have clearly been in crisis, demoralized by falling enrolments and funding, by eroding prestige within and beyond the academy, and by a sense of repetition and intellectual exhaustion. Monographs, edited volumes, and special journal issues have been devoted to "the crisis in the humanities," but few effective solutions have been proposed.[7] The most common response is to deplore the dismal conditions, blame public misperceptions or the degrading influence of late-capitalist consumerism, suggest a stepped-up campaign in public relations, and advise humanists to do precisely what they are already doing, only more vigorously. Menand offers a fairly typical instance. He cites all the usual statistics indicating institutional decline and registers the widespread contempt with which the educated public regard the academic humanities. Even so, he can

envision no real alternative to the paradigm within which he himself works. While casting about desperately for almost any form of renewal in the humanities, he sternly admonishes his colleagues that the one course they must not on any account pursue is "consilience," that is, integrating literary study with the evolutionary human sciences. That option, he declares, would be "a bargain with the devil." Instead, what scholars in the humanities need to do is "hunt down the disciplines whose subject matter they covet and bring them into their own realm."[8] That strategy has not worked before, but perhaps if we keep trying...

As literary culture has been moving steadily further away from the epistemological standards that characterize scientific knowledge, science has been approaching ever closer to a commanding and detailed knowledge of the phenomena most germane to literary culture: to human motives, human feelings, and the operations of the human mind. Evolutionary biology, psychology, and anthropology—along with all contiguous disciplines such as behavioral ecology, affective and social neuroscience, developmental psychology, and behavioral genetics—have begun to penetrate the inner workings of the mind and make it accessible to precise empirical understanding. In Steven Pinker's provocative and stimulating title phrase, scientists are now in a position to give an ever more convincing account of *How the Mind Works.*

Over the past 15 years or so, a group of literary scholars has been assimilating findings from what Pinker calls "the new sciences of human nature."[9] Many "literary Darwinists" aim not just at creating another "approach" or "movement" in literary theory; they aim at fundamentally altering the paradigm within which literary study is now conducted. They want to establish a new alignment among the disciplines and ultimately to encompass all other possible approaches to literary study. They rally to Edward O. Wilson's cry for "consilience" among all the branches of learning.[10] Like Wilson, they envision nature as an integrated set of elements and forces extending in an unbroken chain of material causation from the lowest level of subatomic particles to the highest levels of cultural imagination. And like Wilson, they regard evolutionary biology as the pivotal discipline uniting the hard sciences with the social sciences and the humanities. They believe that humans have evolved in an adaptive relation to their environment. They argue that for humans, as for all other species, evolution has shaped the anatomical, physiological, and neurological characteristics of the species, and they think that human behavior, feeling, and thought are fundamentally constrained and

informed by those characteristics. They make it their business to consult evolutionary biology and evolutionary social science in order to determine what those characteristics are, and they bring that information to bear on their understanding of the products of the human imagination. For the most part, the evolutionists in the humanities have been assiduous in incorporating new knowledge and scrupulous about speculating within the constraints of a biological understanding of human nature. So far, though, only a few have made use of empirical methods. As it seems to us, including empirical methods in the toolkit for literary scholarship is an important final step in bridging the gap between the two cultures.[11]

Not surprisingly, the ambitions of the literary Darwinists have often met with a skeptical response: "There have been previous efforts to establish a scientifically based criticism—Marxism, psychoanalysis, structuralism. All these efforts have failed. Why would yours be any different?" A fair question. Here is our answer: This effort is different because the historical conditions are different. We now have, for the first time, an empirically grounded psychology that is sufficiently robust to account for the products of the human imagination. Darwin's speculations about human nature in *The Descent of Man* were prescient, but evolutionary social science did not become a cumulative research program until the last quarter of the twentieth century.

Until the past few years, three theoretical deficiencies hampered efforts to form a paradigm in evolutionary social science. Early sociobiologists insisted that "selection" takes place only at the level of the gene and the individual organism. David Sloan Wilson has spearheaded the now largely successful effort to resuscitate the idea of "multi-level selection" and use it as the basis for a more adequate understanding of human sociality.[12] In the 1990s, "Evolutionary psychologists" distinguished themselves from sociobiologists by emphasizing "proximate mechanisms" that in ancestral environments fostered reproductive success, but in constructing their model of "the adapted mind," they left out the idea of flexible general intelligence. Books such as Kim Sterelny's *Thought in a Hostile World* (2003) and David Geary's *The Origin of Mind* (2005) demonstrate how that deficiency can be corrected.[13] The third major deficiency was an inadequate appreciation of "gene-culture co-evolution"—the idea that culture operates in reciprocally causal ways with the genetically transmitted features of human nature. That barrier, too, is now giving way. Theorists such E. O. Wilson, Ellen Dissanayake, John Tooby, Leda Cosmides, Brian Boyd, and Denis Dutton have made increasingly

effective arguments that the arts are functionally significant features of human evolution.[14]

We believe these three gradual corrections have now produced a conceptual framework with the explanatory power of a true paradigm. Over the next few years, research in evolutionary literary study will provide a crucial test for the validity of this belief. The decisive evidence will be whether the literary Darwinists generate a cumulative body of explanatory principles that are in themselves simple and general but that nonetheless encompass the particularities and complexities of literature and the other arts. The research described in this book is offered as one contribution to that effort.

Agonistic Structure

The central concept in this study is "agonistic" structure: the organization of characters into protagonists, antagonists, and minor characters. We asked this question: does agonistic structure reflect evolved dispositions for forming cooperative social groups? Within the past decade or so, evolutionists in diverse disciplines have made cogent arguments that human social evolution has been driven partly by competition between human groups. That competition is the basis for the evolution of cooperative dispositions—dispositions in which impulses of personal domination are subordinated, however imperfectly, to the collective endeavor of the social group. Suppressing or muting competition within a social group enhances group solidarity and organizes the group psychologically for cooperative endeavor. Drawing on our own impressions about the features of temperament and moral character that typify characters in novels of the nineteenth century, we hypothesized that protagonists would form communities of cooperative endeavor and that antagonists would exemplify dominance behavior. And this is indeed what we found. In these novels, protagonists and their friends typically form communities of affiliative and cooperative behavior. Antagonists are typically envisioned as a force of social domination that threatens the very principle of community.[15]

Three Main Arguments

On the basis of the data collected through the questionnaire, we make three main arguments (1) that the novels in this study contain determinate structures of meaning that can be captured using the categories in our research design (chapter 3); (2) that differences between

protagonists and antagonists are much more structurally prominent than differences between male and female characters (chapter 4); and (3) that agonistic structure in these novels fulfills an adaptive social function (chapter 5).

Under the influence of deconstructive skepticism, literary theorists have often affirmed that meanings are inherently indeterminate because they are inescapably caught up in semiotic slippages that produce irreconcilable implications. Writing two decades ago, D. A. Miller puts it thus: "Whenever a text makes confident claims to cognition, these will soon be rendered undecidable."[16] Adopting strong versions of Kuhn's theory of "paradigms," literary theorists have often also affirmed that every structure of meaning changes systemically in accordance with the interpretive framework being used. In the most extreme version of this idea, meaning is always preemptively determined—essentially created—by an "interpretive community."[17] Our findings lead us to conclusions different from both deconstructive indeterminacy and strong interpretive constructivism. We asked questions about the attributes of characters and the emotional responses of readers. The high degree of convergence in the answers to these questions suggests that authors determine which attributes readers see in characters and how they respond emotionally to those attributes.

For several decades now, no feature in personal and social identity has received more critical attention than sex and gender. Much of this criticism has taken as its central theme struggles for power based on sex. In chapter 2, in the section "Male and Female Characters by Male and Female Authors," we describe data on the way female authors depict female protagonists. In that data, we detect an undercurrent of feminist revolt. In chapter 4, though, we describe data indicating that struggles for power based on sex are less important than struggles for power based on the conflict between dominance and cooperation. Despite differences of sex, male and female protagonists are much more similar to each other than either are to male and female antagonists. Male and female antagonists, also, are much more similar to each other than either are to male or female protagonists. In the features that distinguish characters, being a protagonist or antagonist matters more than being male or female. This finding leads us to reconsider some of the basic assumptions that have guided feminist literary theory. We argue that feminist theory is troubled by a nagging, unresolvable conflict between "social constructivism" and "essentialism"—the contrasting ideas that sexual identity is an arbitrary social convention and that it is an irreducible, transcendent category. We identify the elements of truth in both constructivism and

essentialism, reconcile them, and suggest a more consistent and comprehensive framework for analyzing gender in both life and fiction.

One of the most hotly debated issues in evolutionary studies in the humanities is whether the arts fulfill any adaptive function at all.[18] Various theorists have proposed possible adaptive functions, for instance, reinforcing the sense of a common social identity, fostering creativity and cognitive flexibility, enhancing pattern recognition, serving as a form of sexual display, providing information about the environment, offering game-plan scenarios to prepare for future problem-solving, focusing the mind on adaptively relevant problems, and making emotional sense of experience.[19]

One chief alternative to the idea that the arts provide *some* adaptive function is that literature and the other arts are like the color of blood or the gurgling noise of digestion—a functionless side-effect of adaptive processes. The data on agonistic structure point to a different conclusion. The ethos reflected in the agonistic structure of the novels replicates the egalitarian ethos of hunter-gatherers, who stigmatize and suppress status-seeking in potentially dominant individuals.[20] By supporting group solidarity, the egalitarian ethos fulfills an adaptive function for hunter-gatherers. If agonistic structure in the novels engages the same social dispositions that animate hunter-gatherers, our study would lend support to the hypothesis that literature can fulfill at least one adaptive social function. We argue that the novels enable readers to participate vicariously in an egalitarian social dynamic like that in hunter-gatherer societies. That vicarious participation presumably influences actual behavior.[21] If participating in an egalitarian social dynamic had adaptive value for ancestral populations, artistic media designed to foster egalitarian dispositions would presumably fulfill the same adaptive function.

Not all novels deploy morally polarized forms of agonistic structure in the clear-cut way exemplified by the average scores across the whole body of novels in this study. Agonistically problematic novels such as *Wuthering Heights* and *The Mayor of Casterbridge* suggest a still deeper, more general way in which novels fulfill evolved human needs. Theorists such as E. O. Wilson, Ellen Dissanayake, Terrence Deacon, and one of the present authors (Carroll) have argued that stories create imaginative virtual worlds through which we orient ourselves psychologically. Evolved and adaptive political impulses are deep and powerful—powerful enough to form the largest organizing feature in the ethos reflected in these novels of the nineteenth century. But human nature consists of more than evolved political dispositions. In the final section of chapter 5, after presenting the

argument on the adaptive function of agonistic structure, we reflect on the agonistically problematic characters who display typically protagonistic intellectual traits but do not display typically protagonistic social traits.

The Scope of Our Claims

Assuming that we can make a convincing case for all three of the arguments described in the previous section, how far can we generalize from those conclusions to all literature, in every period and every culture? Logically, it is possible that no other literary texts anywhere in the world contain determinate meanings, display differences between protagonists and antagonists more prominent than differences between male and female characters, or fulfill any adaptive function at all. Hypothetically possible, but not very likely. If our arguments hold good for this body of texts, they demonstrate that determinate meaning is at least possible, that in at least one body of classic narratives, agonistic role assignment—being a protagonist or antagonist—looms larger than gender role assignment, and that the organization of characters in at least one important body of fictional narratives reflects evolved social dispositions that in ancestral populations fulfilled adaptive functions. It seems unlikely that in these three important respects this body of novels is wholly anomalous.

In proposing that agonistic structure in these novels fulfills an adaptive social function, we do not imagine that we have isolated the sole adaptive function of all literature. Quite the contrary. Along with other evolutionary theorists, we strongly suspect that literature fulfills other functions. Even if it is only one among other possible adaptive functions for narrative and drama, could we reasonably conclude that agonistic structure is a human universal—a formal structure that would appear in the narrative and dramatic productions in all cultures, at all periods, everywhere in the world? We argue that the social dynamics animating these novels derive from ancient, basic features of human nature. Such features would in all likelihood appear in some fictional narratives in most or all cultures. If morally polarized agonistic structure is in fact a human universal, we would be interested to know how it varies in form in different cultural ecologies. Marriage—the "publicly recognized right of sexual access to a woman deemed eligible for childbearing"—is a human universal but varies in form from culture to culture.[22] We might expect agonistic structure, like marriage, to vary in form.

These questions would make good topics of research for other studies. Until those studies are conducted, though, the topics are only a matter for theoretical speculation. For this current study, we can positively affirm only the conclusions we think that our data allow us to draw.

Audience

As a literary topic, British novels of the longer nineteenth century (Austen to Forster) is fairly broad, but our theoretical and methodological aims ultimately extend well beyond the specialist fields of British novels, the nineteenth century, British literature, narrative fiction, or even literary scholarship generally. We aim at engaging literary scholars in all fields and evolutionary scientists too. We hope to persuade literary scholars that empirical methods offer rich opportunities for the advancement of knowledge about literature, and we hope to persuade evolutionary human scientists that the quantitative study of literature can shed important light on fundamental questions of psychology. Our own research team combines these two prospective audiences. Two of us (Carroll and Gottschall) have been trained primarily as literary scholars, and two of us (Johnson and Kruger) primarily as psychologists.

While reaching out to these two academic audiences, we also hope to interest readers, inside and outside academe, who read classic novels and/or serious nonfiction for the sheer pleasure of it. Agonistic structure is deeply embedded in the human imagination. It influences most phases of our imaginative life—religion, philosophy, history, political ideology, workplace gossip, video games, sports, movies. An evolutionary understanding of agonistic structure can illuminate many dark corners of our cultural experience.

The Organization of the Book

In the first chapter, we describe the main features of our research design, explain methods for scoring characters, and offer guidance on assessing the reliability of the scores. In chapter 2, we lay out the results and give examples of scores in each set of categories. In chapters 3 through 5, we discuss the significance of our findings in three main areas: the determinacy of meaning, sexual politics, and the adaptive function of agonistic structure. Chapters 6 and 7 consist of case studies for authors and novels about which we have especially

abundant data. In the conclusion, we come back to the largest themes in this introduction, comparing our approach with other approaches current in literary study, evaluating the charge that literary Darwinism is "reductive," and assessing our own results in relation to an ideal of a complete and comprehensive form of interpretive criticism.

Part I

Methods and Results

In the first chapter in part I, we explain the procedures that we used in collecting data, examine the pool of respondents, and weigh the validity of our methods. In the second chapter, after delineating the model of human nature that is the source of the categories on which we collected scores, we summarize all our main findings across the whole data set. In part II, we shall draw out the implications of those findings and then in part III look closely at results for particular novels

Chapter 1

A User's Manual

Procedures

Overview: Collecting Data and Sorting Characters into Sets

We created an online questionnaire, listed about 2,000 characters from 201 canonical British novels of the nineteenth and early twentieth centuries, and asked respondents to select individual characters and answer questions about them. Potential research participants were identified by scanning lists of faculty in hundreds of English departments worldwide and selecting specialists in nineteenth-century British literature, especially scholars specializing in the novel. Lists of English departments are available on the web, and most departments give a listing of faculty that contains information about their teaching and research interests. Invitations were also sent to multiple listservs dedicated to the discussion of Victorian literature or specific authors or groups of authors in our study. Approximately 519 respondents completed a total of 1,470 questionnaires on 435 characters from 134 novels. A copy of the questionnaire used in the study can be accessed at the following URL: *http://www-personal.umich.edu/~kruger/carroll-survey.html*. (The form is no longer active and will not be used to collect data.)

The questionnaire contains three sets of categories. One set consists of elements of the characters' personal identities: age, attractiveness, motives, the criteria of mate selection, and personality. (The sex of the characters was a given.) A second set of categories consists of readers' subjective responses to characters. Respondents rated characters on ten possible emotional responses and also signified whether they wished the character to succeed in achieving his or her goals.

The third set consists of four possible "agonistic" role assignments: (1) protagonists, (2) friends and associates of protagonists, (3) antagonists, and (4) friends and associates of antagonists. Respondents were free to fill out questionnaires on any character from the list.

Dividing the four agonistic character sets into male and female sets produces a total of eight character sets, with each set defined along three dimensions: a contrast between *major* and *minor* characters (Salience), a contrast between *good* and *bad* characters (Valence), and a contrast between *male* and *female* characters (Sex). We refer to protagonists and antagonists together as major characters and to their associates as "minor" characters. Following popular usage, we refer to protagonists and their associates as "good" characters and to antagonists and their associates as "bad" characters. In adopting the common terms "good" and "bad," we intend no preemptive moral judgments. As it happens, though, the data indicate that good and bad characters are heavily inflected with morally relevant traits. Popular usage evidently has its reasons.

Scoring the Characters

The questions on the attributes of characters are designed to produce summary impressions about characters. For instance, respondents are required to assess how much a given motive counts in the total set of all motives over that part of a character's life that is depicted in a novel. If motives change in changing circumstances, or if one motive conflicts with another, the respondents must weigh those differences and choose a score that reflects the relative importance of the motive in that character's life. The same principle applies to the emotional responses of readers. A reader might feel anger at a character but nonetheless feel sadness for his or her misfortunes. The scores that are registered for each emotion must be weighed in proportion to the total range of emotional effects produced by any given character.

Most of the categories in the questionnaire were coded on a five-point scale running from "unimportant" to "very important." ("I do not remember" was also included as an option but was seldom used by our respondents.) For instance, under the questions on motives, respondents were asked to rate a character on each of twelve motives by clicking a circle in a scale of one to five, with one being unimportant and five being very important. A respondent would thus have to decide whether, for instance, "gaining or keeping power" was, for a given character, unimportant, moderately unimportant, of average importance, moderately important, or very important. Multiple scores

for individual characters were averaged, and that individual average was included in the average score for the character set to which that character was assigned.

The scores on motives, the criteria of mate selection, and emotional responses produced data that we condensed into smaller sets of categories through a statistical process known as "factor analysis." Factor analysis identifies items that tend to cluster together. (The details on each factor analysis can be found in appendix 6.) From 12 motives, factor analysis produced five motive factors; from seven mate-selection criteria, three mate-selection factors; and from ten emotional responses, three emotional response factors. For instance, under motives, factor analysis revealed that the desire for wealth, the desire for power, and the desire for prestige cluster together, forming a single factor that we call "Social Dominance." Under mate selection, the criteria of intelligence, kindness, and reliability cluster together, forming a single factor that we call "Intrinsic Qualities." Under emotional response, anger at a character correlates with disgust and contempt *for* the character and with fear *of* the character, and all these emotions together form a single factor that we call "Dislike." The personality terms that we used are from an already established set of factors, the "five-factor" or "Big Five" personality system. (The five factors are Extraversion, Agreeableness, Conscientiousness, Emotional Stability, and Openness to Experience.)

Motive factors, mate-selection factors, and emotional response factors are all composite categories. These composite categories are very useful in revealing large-scale patterns of relationship among the character sets. It is sometimes useful to look also at the scores on the constituent elements that go to make up each factor, especially when analyzing individual characters. For instance, the emotional response factor "Dislike" is a composite category in which the main components are anger, disgust, contempt, and fear. Count Dracula from Bram Stoker's *Dracula* and Mr. Collins from Jane Austen's *Pride and Prejudice* both score high on Dislike, but the largest constituent score for Count Dracula is fear, and for Mr. Collins contempt. At the level of character sets, such differences are merged into the large-scale patterns of relationship among factors. At the level of individual characters, the differences sometimes matter.

Averaging Scores and Using Majority Rule in Role Assignments

For characters who received multiple codings, the averaged scores for each such character are counted only once in the total set of

scores. For instance, Elizabeth Bennet from Jane Austen's *Pride and Prejudice* was coded by 81 respondents. On each category, the scores of all respondents were averaged, and that average score is counted only once in the total data set. (We discuss the range of variation among multiple coders in a subsequent section: "Assessing Intercoder Reliability.") Elizabeth's averaged scores count precisely as much in the larger data set as the scores for any character who was coded only once. In each case, only one set of scores is averaged into the total of scores for all characters.

When multiple readers did not agree on role assignments, we assigned characters to the role designated by the majority of the respondents. Differences in designations of Salience usually involve only divided views as to whether a character should be designated a major character in his or her own right or, alternatively, as a friend or associate of a major character. Differences in designations of Valence usually involve judgments about whether a certain borderline blend of protagonistic and antagonistic features could more reasonably be located in a protagonistic or antagonistic category.

Big multiplot novels like *Bleak House*, *Vanity Fair*, and *Middlemarch* contain dozens of characters and more than one protagonist, but most of the characters are minor, and competent readers usually recognize the difference between the large group of characters who are distinctly minor and the small group of characters who form the chief focus of narrative attention and interest.[1] Differences in attributions of Salience do not usually reflect any difference of opinion as to whether some one main character should be designated a protagonist. Nor do such differences usually concern distinctly minor characters. Differences in designations of characters as major or minor occur chiefly with respect to characters within an inner protagonistic group of characters. The main source of uncertainty is just how narrowly to circumscribe the term "protagonist." Emma in Austen's *Emma*, for example, is clearly a protagonist. (So say 72 of 74 respondents.) But is her consort George Knightley also a protagonist, or only an associate of a protagonist? (One respondent designates him a protagonist, but 14 declare him only an associate of a protagonist.) The chief question that produces ambiguity in designating characters major or minor is whether to limit the application of the term "protagonist" to just one main character.

The process of creating a narrative focus and thus registering differences of Salience often begins with the title of a novel. Starting with the first fictional prose narratives that are generally recognized as "novels" in the English tradition—in the early eighteenth

century—many of the titles of canonical novels consist of the name of some one main character or small group of characters, or with some close, descriptive proxy for such names, for instance: *Robinson Crusoe*, *Moll Flanders*, *Pamela*, *Clarissa*, *Joseph Andrews*, *Tom Jones*, *Humphrey Clinker*, *Ivanhoe*, *Rob Roy*, *Emma*, *Jane Eyre*, *Agnes Gray*, *Frankenstein*, *Oliver Twist*, *Barnaby Rudge*, *Dombey and Son*, *Nicholas Nickleby*, *Martin Chuzzlewit*, *David Copperfield, Little Dorrit*, *Barry Lyndon*, *Henry Esmond*, *Pendennis*, *The Virginians*, *The Newcomes*, *Mary Barton*, *Ruth*, *The Warden*, *Phineas Finn*, *Phineas Redux*, *The Prime Minister*, *The Duke's Children*, *Adam Bede*, *Silas Marner*, *Felix Holt*, *Romola*, *Daniel Deronda, A Little Princess*, *Little Lord Fauntleroy*, *The Return of the Native*, *Tess of the d'Urbervilles*, *The Mayor of Casterbridge*, *Jude the Obscure*, *Dr. Jekyll and Mr. Hyde*, *Alice's Adventures in Wonderland*, *Dracula*, *Kim*, *The Picture of Dorian Gray*, *Portrait of a Lady*, *The Princess Casamassima*, *The Ambassadors*, *The Secret Agent*, *Lord Jim*, and *Nostromo*. As this list should suggest, the idea of "Salience" is not an artificial theoretical construct fabricated by literary theorists. It is an idea that is implicit in the organization of narratives around the fortunes of some one main character or some small set of characters.

We could also take a set of titles from place names, for instance, *Mansfield Park*, *Wuthering Heights*, *Villette*, *The Old Curiosity Shop*, *A Tale of Two Cities*, *Bleak House*, *Barchester Towers*, *The Small House at Allington*, *The Mill on the Floss*, *Middlemarch*, *The Secret Garden*, and *Howard's End*. In virtually all such cases, the narrative is clearly organized around the fortunes of some one main character or small group of characters who happen to be associated with the place identified in the title. A similar observation applies to novels with titles that consist of thematic tags and symbolic images, as, for instance, *Sense and Sensibility*, *Pride and Prejudice*, *Persuasion*, *Vanity Fair*, *The Wings of the Dove*, *The Golden Bowl*, and *The Heart of Darkness*. The main characters in such novels typically exemplify the themes or symbols registered in the title. Without doing violence to the narrative focus, we could hypothetically retitle all these novels in the fashion of novels that take their names from the chief characters, for instance, *Catherine and Heathcliff* (*Wuthering Heights*), *Maggie Tulliver* (*The Mill on the Floss*), *The Dashwood Sisters* (*Sense and Sensibility*), *The Rise and Fall of Becky Sharp and the Fall and Rise of Amelia Sedley* (*Vanity Fair*), *The Death of Millie Theale and the Spiritual Trial of Merton Densher* (*The Wings of the Dove*), and *Marlow's Encounter with Kurtz* (*Heart of Darkness*). Novels are, above all else, stories about characters. They are fabricated