Joseph Carroll, Jonathan Gottschall[1]

Human Nature and Agonistic Structure
in Canonical British Novels
of the Nineteenth and Early Twentieth Centuries
A Content Analysis

Content analysis is given for 170 characters from 44 canonical British novels. Characters were divided into protagonistic and antagonistic groups and were coded for age, sex, motives, mate selection preferences, and personal qualities. Categories for motives and mate selection preferences were drawn from Darwinian social science. Categories for personal qualities were adapted from the Big Five personality system. In all categories, averages of all male and all female characters were compared with averages of male and female protagonists. Chief findings were that average mate selection preferences for all male and all female characters correspond to expectations from evolutionary psychology but that agonistic status (protagonists and antagonists) counts more heavily than sex in the organization of motives, mate selection preferences, and personal qualities. Mate selection preferences correlate with motives and personal qualities. Antagonists are strongly motivated by the desire for wealth and status and are not strongly motivated by a desire for education or the desire to help others. Protagonists reverse this pattern. With respect to personal qualities, protagonists are warmer, more reliable, more intellectually lively, and less socially dominant than antagonists.

Vorgestellt wird eine Inhaltsanalyse für 170 Figuren aus 44 kanonischen britischen Romanen. Die Figuren wurden in Protagonisten und Antagonisten eingeteilt und nach Alter, Geschlecht, Motivationen, Partnerwahlpräferenzen und Charaktereigenschaften aufgeschlüsselt. Die Kategorien für die Beschreibung von Motivationen und Partnerwahlpräferenzen wurden aus sozialwissenschaftlichen Studien mit evolutionsbiologischer Perspektive abgeleitet. Die Kategorien für die Beschreibung von Charaktereigenschaften wurden aus dem Fünf-Faktoren-Modell der Persönlichkeit übernommen. In allen Kategorien wurden die Durchschnittswerte aller männlichen und aller weiblichen Figuren mit den Durchschnittswerten männlicher und weiblicher Protagonisten verglichen. Die wichtigsten Ergebnisse waren, daß die durchschnittlichen Partnerwahlpräferenzen aller männlichen und aller weiblichen Figuren den Erwartungen der evolutionären Psychologie entsprechen, daß aber der agonistische Status (Protagonisten und Antagonisten) bei der Organisation von Motivationen, Partnerwahlpräferenzen und Charaktereigenschaften stärker ins Gewicht fällt als das Geschlecht. Die Partnerwahlpräferenzen korrelieren mit den Motivationen und Charaktereigenschaften. Die Antagonisten sind stark motiviert durch das Verlangen nach Wohlstand und sozialem Status und kaum motiviert durch ein Verlangen nach Bildung oder danach, anderen zu helfen. Die Protagonisten zeigen das umgekehrte Muster. In bezug auf die Charaktereigenschaften sind die Protagonisten herzlicher, verläßlicher, intellektuell lebendiger und sozial weniger dominant als die Antagonisten.

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1. Historical and Theoretical Context of the Study

The most important development in the world of knowledge since the emergence of ancient Greek philosophy is the development of scientific method.[2] That development began in the Renaissance, roughly at the same time as the recuperation of ancient literature and the emergence of a modern literary culture. In some ways, science and literature have since then progressed in tandem, each influencing the other. Scientific questions have emerged out of large imaginative and philosophical paradigms, and literature has inevitably absorbed much information from science and has adjusted its imaginative vision to the changing world picture produced by scientific discovery. Nonetheless, in method the two branches of knowledge have remained fundamentally distinct.

Scientific knowledge submits itself to the canons of empirical inquiry – to the formulation of testable hypotheses, to the production of data, the use of data to falsify hypotheses, and the cumulative integration of positive findings. If one accepts (as we do), the arguments of Edward O. Wilson in *Consilience*, the scientific ethos contains also an implicit presumption that all knowledge is ultimately coherent and integral.[3] Humanistic and literary culture, in contrast, progresses, if at all, by way of argument and rhetoric, and more often than not it presupposes that rhetoric operates within a qualitative realm incommensurate with the quantitative reductions of science. In its most scholarly guise, traditional literary study aims at producing objective textual and historical information, but all such information is encompassed within larger interpretive paradigms, and those paradigms are themselves speculative and rhetorical in character. In *The Two Cultures and the Scientific Revolution* (1959), Charles P. Snow charged literary scholars with ignorance of scientific facts, but the neglect of empirical method is a deeper, more serious deficiency than the ignorance of particular facts.[4]

During roughly the first two thirds of the twentieth century, the most common larger 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

[2]   See Steven Weinberg: Dreams of a Final Theory. New York 1992, 10.
[3]   Edward O. Wilson: Consilience. The Unity of Knowledge. New York 1998. Also see Weinberg: Dreams of a Final Theory (note 2), 6, 46.
[4]   Charles P. Snow: The Two Cultures. Cambridge 1993.

interpretive models from the whole field of human discourse – from science, literature, philosophy, the social sciences, history, current events, and common knowledge. This latter ›method‹, if so it may be called, is that of belle-lettristic 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 trash 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 itself to have some solid grounding in scientifically ascertained reality. Practitioners of belle-lettristic 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 own individual sense of the plausible or the rhetorically striking.

Over the past three decades or so, all of these older forms of literary criticism have been partially assimilated to a new ideology and partially superseded by it. The new ideology, sometimes known as poststructuralism and sometimes as postmodernism, has incorporated Freudianism and Marxism (particularly in their Lacanian and Althusserian forms), but it has also overtly rejected the idea of scientific knowledge as a standard of epistemic validity. Instead, it has incorporated science itself within the realm of rhetorical improvisation once held to be the peculiar, qualitative province of humanistic inquiry. The key to this incorporation is deconstructive philosophy. As practiced by Derrida, Foucault, and their acolytes, deconstruction envisions all human cognition as operating within an all-encompassing realm of unstable and self-undermining semiotic activity. In the absence of progressive, empirical knowledge, all signs, even scientific signs, serve only as the media of power politics matched against subversive forms of group social identity.

As literary culture has been moving steadily further away from the canons of scientific knowledge, science has itself 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 and psychology, with all its attendant and contiguous disciplines in anthropology and cognitive neuroscience, have begun to penetrate the inner sanctum of the ›qualitative‹ and make it acces-

sible to precise empirical knowledge. In Steven Pinker's provocative and stimulating title phrase, scientists are now in a position to give ever more compelling knowledge about »how the mind works«.[5]

In the last decade or so, a number of literary scholars have sought to assimilate the findings from this Darwinian social science.[6] However assiduous and scrupulous they might be in incorporating new knowledge and in speculating within the constraints of a biological understanding of human nature, these scholars have for the most part failed to find means of incorporating empirical methodology into their work. What they have done instead is to adopt Darwinian social science as a new interpretive vocabulary with which to conduct rhetorical analyses essentially parallel, in method, with the sorts of analyses that used to be conducted by old-fashioned Freudians and Marxists.

The study we are reporting on here is designed to help bridge the gap between scientific method and literary study. One of us (Gottschall) has already undertaken several studies using the methods of »content analysis«, that is, »the systematic, objective, quantitative analysis of message characteristics«.[7] Most of Gottschall's content analyses have been cross-cultural analyses of folk tales or fairy tales, and they have aimed at giving evidence for »human universals.« One study used summaries of works from Western literature with the purpose of producing a »census« of basic facts about the demographics of characters in those works.[8]

In this present study, we have adapted the methodology of these previous content analyses for the purpose of providing empirical information about the construction of character in Victorian novels. The data that emerge from this study prompt hypotheses about the nature of protagonists and antagonists and about the cultural values of the Victorian period. Those hypotheses should themselves be susceptible to further empirical tests, to falsification or to qualification and development. The information we pro-

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[5] Steven Pinker: How the Mind Works. New York 1997.

[6] For a survey of this literature, see Joseph Carroll: Literary Darwinism. Evolution, Human Nature, and Literature. New York 2004, 11-22; Joseph Carroll: Evolutionary Psychology and Literary Study. In: David Buss (Ed.): Handbook of Evolutionary Psychology. New York 2005, 931-952. Also see Jonathan Gottschall, David Sloan Wilson (Ed.): The Literary Animal. Evolution and the Nature of Narrative. Evanston (forthcoming).

[7] Kimberly A. Neuendorf: The Content Analysis Guidebook. Thousand Oaks 2002, 1.

[8] Jonathan Gottschall et al.: Patterns of Characterization in Folk Tales Across Geographic Regions and Levels of Cultural Complexity. Literature as a Neglected Source of Quantitative Data. In: Human Nature 14 (2003), 365-382; J. G. et al.: Results of an Empirical Search for the Virgin-Whore Dichotomy. In: Interdisciplinary Literary Study 6 (2004) (in press); J. G. et al.: Sex Differences in Mate Choice Criteria Are Reflected in Folk Tales From Around the World and in Historical European Literature. In: Evolution and Human Behavior 25 (2004), 102-112; J. G. et al.: A Census of the Western Canon. Literary Studies and Quantification (under submission).

vide here can be used for the purposes of rhetorical interpretation of specific novels. That is a legitimate use, but beyond that, what we are aiming at is the production of a new and different kind of literary knowledge, empirical knowledge, and thus knowledge that is epistemologically on a level with the knowledge available in the social sciences. We provide knowledge for further literary study, but we also seek to make literary knowledge an integral part of the knowledge of the social sciences.

2. Scope and Method of the Study

We report the results of a study we conducted on the motives, mate selection preferences, and personality characteristics of 270 characters (170 male, 100 female) from forty-four canonical British novels of the nineteenth and early twentieth centuries.[9] The earliest novelist in our list is Jane Austen, from the beginning of the nineteenth-century, and the latest is Edward M. Forster, most of whose novels were published in the decade before the First World War. The forty-four novels coded in this study were all the British novels between Austen and Forster for which summaries were available in two main series of student guides, *CliffsNotes* and *SparkNotes*. Using character summaries from these guides, a team of twelve student coders coded approximately 22 characters each. These forty-four novels are novels that are regularly taught in the schools and universities. The selection thus constitutes a roughly representative sampling of important novels from the period.

Our specific purposes were (a) to provide empirical data on the construction of characters in the novels of the period; (b) to compare the depiction of male and female characters; (c) to compare the mate selection criteria

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[9]   Jane Austen: *Emma, Mansfield Park, Northanger Abbey, Persuasion, Pride and Prejudice, Sense and Sensibility*; Charlotte Brontë: *Jane Eyre*; Emily Brontë: *Wuthering Heights*; Francis Hodgson Burnett: *The Secret Garden*; Samuel Butler: *The Way of All Flesh*; Wilkie Collins: *The Moonstone*; Joseph Conrad: *Heart of Darkness, Lord Jim*; Charles Dickens: *Bleak House, David Copperfield, A Christmas Carol, Great Expectations, Hard Times, Oliver Twist, Pickwick Papers, A Tale of Two Cities*; Sir Arthur Conan Doyle: *Hound of the Baskervilles*; George Eliot: *Adam Bede, Middlemarch, The Mill on the Floss, Silas Marner*; Edward M. Forster: *A Room with a View, Howard's End, A Passage to India*; Thomas Hardy: *Far from the Madding Crowd, Jude the Obscure, The Mayor of Casterbridge, The Return of the Native, Tess of the d'Urbervilles*; Henry James: *The Ambassadors, The American, Daisy Miller, Portrait of a Lady*; Sir Walter Scott: *Ivanhoe*; Mary Shelley: *Frankenstein*; Robert Louis Stevenson: *Dr. Jekyll and Mr. Hyde, Kidnapped, Treasure Island*; Bram Stoker: *Dracula*; William Makepeace Thackeray: *Vanity Fair*; Oscar Wilde: *The Picture of Dorian Gray*. (Two of these novelists, James and Conrad, were naturalized British citizens.)

depicted in the novels with cross-cultural criteria identified by evolutionary psychologists; (d) to compare the depiction of characters in male and female authors; and (e) to identify aspects of motives, mate selection, and personal qualities that distinguish protagonists, antagonists, and friends and supporters of protagonists and antagonists. (When referring to whole agonistic groups – protagonists and their friends and associates, or antagonists and their friends and associates – we refer to these groups, for the sake of brevity, as ›good‹ and ›bad‹ characters. When referring to protagonists and antagonists alone, excluding their friends and associates, we refer to them as ›agonistic agents‹.)

We compared (a) the characteristics of protagonists and antagonists; (b) the characteristics of male and female protagonists and antagonists with the average characteristics of all male and female characters; and (c) the average mate selection criteria of males and females with cross-cultural findings on mate selection criteria. We also assessed relations between mate selection criteria, motives, and personal qualities for all character groups. We hypothesized that the qualities attributed to protagonists and antagonists would reflect the moral and cultural values of the period in which the novels were written. Through the comparisons and assessments of the various character groups, we sought to identify the relation between universal elements of human nature and the cultural values of the period in which the novels were written.

We obtained statistically significant results on all of the topics identified above except the depiction of characters in male and female authors. The number of female authors in the study (six) was too small to reach statistical significance. Mate selection criteria in the populations of all male and all female characters largely conformed to predictions from evolutionary psychology. Protagonists and antagonists displayed sharply marked and closely correlated differences in motives, mate selection criteria, and personal qualities. These differences provide grounds for robust hypotheses about the cultural values reflected in the novels of the period.

To guide coders in identifying protagonists and antagonists, the following explanation was given:

> A chief protagonist is someone whose concerns are main factors in the outcome of the plot and also someone with whom the reader is expected to sympathize. Readers usually want a protagonist to succeed, to overcome obstacles, and achieve fulfillment. A chief antagonist is someone who is centrally involved in the fate of a chief protagonist and is hostile to the chief protagonist or has goals that are in fundamental conflict with the goals of the protagonist. Readers are not expected to sympathize with antagonists. Readers usually dislike antagonists and want them to fail.

Our most suggestive finding is that differences between all male characters and all female characters, though distinct, are of smaller magnitude than

the differences between protagonists and antagonists. That is, in motives, mate selection criteria, and personal qualities, male and female protagonists share a family likeness that overshadows differences of sex. And the same is true of male and female antagonists.

For motives, mate selection criteria, and personal qualities, coders were given a list of options under each category and asked to rate each character on each option on a scale from one to five. (For any given category, coders also had the option of marking an entry for ›no information available‹.)

Characters were coded for seven possible motives: survival, finding or keeping a spouse, gaining wealth or resources, gaining social status, obtaining education or culture, fostering offspring or aiding other kin, and aiding non-kin. (Coders were instructed that »survival« was to be considered an important motive only if the character is actively seeking to preserve his or her life from real and imminent threats such as starvation, murder, exposure to the elements, or danger in war.) A rating of one on any given motive signified ›unimportant to this character‹, and a rating of five signified ›indispensable to this character‹.

All but one of these seven motives are standard elements in expositions of human life-history analysis from a Darwinian perspective.[10] Survival and the acquisition of resources are core ›somatic‹ motives. Finding or keeping a spouse and aiding offspring or other kin are core ›reproductive‹ motives. Gaining social status and aiding non-kin are key components of social interaction for a highly social species, and both motives contribute to both somatic and reproductive effort.[11] The one motive that is not routinely included in such expositions is ›obtaining education or culture‹. This motive was included for two reasons: (1) prior knowledge of the importance attached to it in British novels of this period, and (2) a theoretical hypothesis that curiosity or ›inquiring intellect‹ are integral parts of human nature.[12]

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[10] See for instance Napoleon Chagnon, William Irons (Ed.): Evolutionary Biology and Human Social Behavior. An Anthropological Perspective. North Scituate 1979; Richard D. Alexander: The Biology of Moral Systems. Hawthorne 1987; Martin Daly, Margo Wilson: Homicide. Hawthorne 1988; Irenäus Eibl-Eibesfeldt: Human Ethology. Hawthorne 1989; Donald Brown: Human Universals. Philadelphia 1991; Bobbi S. Low: Why Sex Matters. A Darwinian Look at Human Behavior. Princeton 2000; David Buss: Evolutionary Psychology. The New Science of the Mind. Boston ²2003; Louise Barrett, Robin Dunbar, John Lycett: Human Evolutionary Psychology. Princeton 2002.

[11] For an explanation of how the life history of any organism can be divided into ›somatic‹ and ›reproductive‹ forms of effort, see Alexander: The Biology of Moral Systems (note 10), 40-42.

[12] For an argument in support of this hypothesis, see Joseph Carroll: Human Nature and Literary Meaning. A Theoretical Model Illustrated with a Critique of *Pride and Prejudice*. In: Carroll: Literary Darwinism (note 6), 187-216.

Six mate selection criteria were listed for coding: physical attractiveness, social status, wealth, intelligence, kindness, and reliability. The choice of these criteria for coding was prompted most directly by the work of David Buss on cross-cultural preferences in mate selection. Building off the prior work of Donald Symons and others, Buss surveyed mate preferences in thirty-seven diverse cultures.[13] He found that males and females both highly value intelligence, kindness, and reliability in a mate. He also found that males preferentially seek youth and physical attractiveness in a mate; and females preferentially seek wealth and status. From a Darwinian perspective, these preferences are the result of an adaptive process of natural selection operating through the logic of reproductive success. Physical attractiveness is a proxy for youth and health, and young, healthy women have more reproductive potential than older, unhealthy women. Human males have a longer reproductive span than human females, and the crucial way in which a male can contribute toward a female's reproductive success is to provide resources for the maintenance of her and her offspring. Social status in a male is a medium and proxy for the acquisition of resources.

Personal qualities were assessed using four terms: dominance, warm-heartedness, reliability, and intellectual liveliness. These four terms were adapted from the Big Five personality system, in some versions called the Five-Factor Model of personality. The five factors are ›extraversion‹, ›agreeableness‹, ›conscientiousness‹, ›neuroticism‹, and ›openness‹ or ›inquiring intellect‹.[14] ›Dominance‹ is an aspect of ›extraversion‹ and when combined with low ›agreeableness‹ correlates with motives of status seeking. ›Warm-heartedness‹ is a version of ›agreeableness‹ and correlates with prosocial motives (helping kin and non-kin). ›Extraversion‹ and ›agreeableness‹ are the chief elements in the »interpersonal circumplex« developed by Jerry S. Wig-

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[13] Donald Symons: The Evolution of Human Sexuality. New York 1979; David Buss: Sex Differences in Human Mate Preferences. Evolutionary Hypotheses Tested in 37 Cultures. In: Behavioral and Brain Sciences 12 (1989), 1-49; David Buss: The Evolution of Desire. New York ²2003. Also see David Geary: Male, Female. The Evolution of Human Sex Differences. Washington 1998. For a study that directly tests Buss's hypotheses in a cross-cultural content analysis of folk tales, see Gottschall et al.: Sex Differences in Mate Choice Criteria (note 8).

[14] See David Buss: Social Adaptation and Five Major Factors of Personality. In: Jerry S. Wiggins (Ed.): The Five-Factor Model of Personality. Theoretical Perspectives. New York 1996, 180-207; Gerard Saucier, Louis Goldberg: The Language of Personality. Lexical Perspectives on the Five-Factor Model. In: Jerry S. Wiggins (Ed.): The Five-Factor Model of Personality. Theoretical Perspectives. New York 1996, 21-50; Jerry S. Wiggins, Paul Trapnell: Personality Structure. The Return of the Big Five. In: Robert Hogan, John Johnson, Stephen Briggs (Ed.): Handbook of Personality Psychology. San Diego 1997, 737-765; Oliver P. John, Sanjay Srivastava: The Big Five Trait Taxonomy: History, Measurement, and Theoretical Perspectives. In: Lawrence Pervin, Oliver P. John (Ed.): Handbook of Personality. New York ²1999, 102-138.

gins and other personality psychologists to register the quality of interpersonal relations.[15] ›Reliability‹ is a chief aspect of ›conscientiousness‹ and is a chief criterion in mate selection. ›Intellectual liveliness‹ is a version of ›openness‹ or ›inquiring intellect‹ and correlates with motives of seeking education or culture. The one factor in the Big Five personality factors that is not assimilated to this set of characteristics is ›neuroticism‹, a measure of fearfulness and anxiety.

3. Results of the Study

The chief results of the study can best be displayed by locating the characters within two main groups and comparing the groups with respect to motives, mate selection criteria, and personal qualities. The two groups are (a) all males and all females; and (b) male and female protagonists and antagonists.

Characters were apportioned into the agonistic categories in the following way:

28.3 %	Protagonists (43 males, 32 females)
42.3 %	Friends and associates of protagonists (72 males, 40 females)
18.5 %	Antagonists (35 males, 13 females, 1 sex undetermined)
4.9 %	Friends and associates of antagonists (7 males, 6 females)
6.0 %	Neutrals (none of the above) (9 males, 7 females)

On most motives, mate selection criteria, and personal qualities, all good characters (protagonists plus friends and associates of protagonists) and all bad characters (antagonists plus friends and associates of antagonists) deviate from populational averages in opposite directions. Protagonists and antagonists represent the extremes in the tendencies constituted by their groups. For instance, good males as a group are less dominant, warmer, more reliable, and more intellectually lively than bad males as a group. Male protagonists represent the extreme in that tendency for all four qualities. Male antagonists represent the extreme in the tendency of all bad males for all qualities except intellectual liveliness.

The scores on dominance surprised us. We had anticipated that dominance would be understood as a form of leadership or rank within a social group, so that protagonists would be seen as more dominant than their friends and associates, and antagonists would be seen as more dominant than their friends and associates. We also anticipated that, in accordance

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[15] Jerry S. Wiggins, Paul D. Trapnell: A Dyadic-Interactional Perspective on the Five-Factor Model. In: J. S. W. (Ed.): The Five-Factor Model of Personality. Theoretical Perspectives. New York 1996, 88-162.

with a patriarchal social hierarchy, males would be more dominant than females. Contrary to our expectations, male protagonists are the least dominant males. Within each agonistic group, males are more dominant than females, but female antagonists (3.77) are more dominant than male protagonists (3.49). Female protagonists are the least dominant group (3.45).

Key factors that enter into the dominance ratings are that antagonists are on average older than protagonists and also more intensively motivated by the desire for wealth and social status. The list below details the average age of agonistic groups:

Female protagonists	23
All good females	28
Male protagonists	29
All good males	33
Female antagonists	35
All bad females	36
Male antagonists	37
All bad males	38

One general impression that emerges from the data on age, motives, and personal qualities is that the novels of the period display a pervasive plot pattern in which young and less socially dominant people seek to make their way in the world against the obstructions of older, more powerful people. Our data indicate that protagonists are typically young adults who are strongly motivated by love, prosocial feelings, and the desire for education. Antagonists are typically older people motivated predominantly by a desire for wealth and social status.

In the remaining part of this section, we shall compare results on two character sets: (a) all males and all females; and (b) male and female protagonists and antagonists. We shall compare mean ratings for each character set in each of three categories: motives, mate selection, and personal qualities.

With respect to motives, the differences in the mean scores of all males and all females reached statistical significance in only one motive, ›survival‹ (males 2.56, females 1.73). Given both universal differences in male and female violence and in high-risk behavior, and given also the confined and domesticated conditions of life for Victorian women, it is understandable that male characters would more often be depicted in situations of mortal danger.

Male protagonists and female protagonists display some differences in motives, as do male and female antagonists. As table 1 indicates, however, those differences are overshadowed by the contrasts between protagonists (male and female together) and antagonists (male and female together).

Agonistic agents	Survival	Marriage	Wealth	Status	Education	Aid kin	Non-kin
Male protagonists	3.52	3.48	2.89	2.56	4.04	3.45	3.72
Female protagonists	1.53	4.0	2.04	2.55	3.1	3.91	3.88
Female antagonists	1.5	4.17	4.11	4.3	1.57	1.83	1.43
Male antagonists	2.24	2.9	4.18	3.82	1.73	1.75	1.65

Table 1: Motives for Male and Female Agonistic Agents

Female protagonists and antagonists both seek marriage more than male antagonists or protagonists seek it, and that fact probably reflects the limited range of life options available to Victorian women. The most revealing patterns are those for wealth, status, education, and aiding kin and non-kin. Protagonists of both sexes seek wealth and status less than antagonists of both sexes seek them, and protagonists of both sexes seek education and seek to aid kin and non-kin more intensively than antagonists of either sex seek them. Male protagonists seek education more than female protagonists. That finding reflects the actual conditions of Victorian life, since higher education was closed to women. But female protagonists nonetheless seek education much more intensively than male antagonists seek it.

As previously noted, in his study of mate preferences, David Buss found that males and females both highly value intelligence, kindness, and reliability. He also found that males give a higher preference to physical attractiveness in a mate and that females give a higher preference to wealth and status in a mate. Table 2 shows that the population of all males and all females in the novels displays mate selection preferences that correspond to these findings in Buss's study.

Sex groups	Intelligence	Kindness	Reliability	Attractiveness	Status	Wealth
All males	3.21	3.61	3.02	3.83	2.9	2.7
All females	3.67	3.73	3.65	2.76	3.6	3.6

Table 2: Mate Selection Preferences among All Male and Female Characters

The differences in male and female preferences for intelligence, kindness, and reliability are not statistically significant. The differences in male and female preferences for physical attractiveness, status, and wealth are statistically significant. Males seek physical attractiveness at a rate exceeding that at

which females seek it, and females seek wealth and status at a rate exceeding that at which males seek it.

The differences in mate selection preferences between protagonists and antagonists of both sexes are much more pronounced than the differences between all males and all females. Table 3 displays these differences.

Sex groups	Intelligence	Kindness	Reliability	Attractiveness	Status	Wealth
Male protagonists	3.38	3.94	3.36	4.37	2.31	2.36
Female protagonists	3.86	4.05	3.68	2.29	2.89	2.58
Male antagonists	2.3	2.43	1.5	4.33	4.17	4.23
Female antagonists	4.0	3.0	3.0	3.75	4.43	5.0

Table 3: Mate Selection Preferences among Male and Female Agonistic Agents

Female antagonists rate very high on seeking physical attractiveness in a mate – thus reversing a populational female norm. (They also rate surprisingly high on preference for intelligence in mates.) Male protagonists and antagonists both accentuate the general male desire for physical attractiveness in a mate, but male antagonists care little for intelligence, kindness, or reliability in a mate. Male protagonists accentuate the average male desire for reliability in a mate. Female protagonists diminish but do not reverse the average female desire for wealth and status in a mate.

The most striking comparisons in mate selection are those for the valuing of status and wealth. Figure 1 graphically illustrates the step-ladder of ambition and greed formed by male protagonists, female protagonists, male antagonists, and female antagonists.
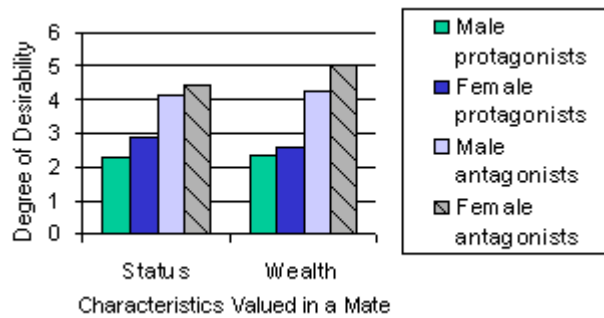

Figure 1: Mate Selection Preferences for Status and Wealth among Agonistic Agents

As expected, females of both agonistic groups value status and wealth in a mate more than the males of that group value status and wealth, but male antagonists value wealth and status in a mate *more than female protagonists* value them, and of course much more than male protagonists value them. That is, greed and ambition in a male antagonist are sufficiently great to counterbalance the usual male pattern of mate selection preferences.

We shall now compare personal qualities. Sex differences in reliability for all male and female characters did not reach statistical significance (3.42 for males; 3.56 for females). In the three other personal qualities – dominance, intellect, and warmth – the general population of all male and all female characters display differences that are statistically significant but still moderate. Males are more dominant than females (3.84 vs. 3.32) and more intellectually lively (3.67 vs. 3.1); females are warmer than males (3.68 vs. 3.24). As figure 2 indicates, these modest differences in the sexes are dwarfed by the differences between the protagonistic groups.
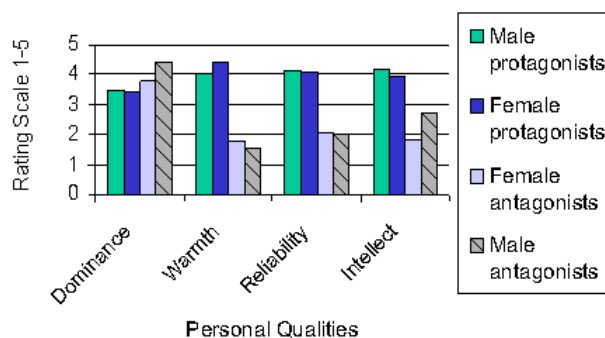

Figure 2: Personal Qualities of Male and Female Agonistic Agents

Protagonists of both sexes are warm, reliable, and intellectually lively. Antagonists of both sexes are dominant, cold, unreliable, and intellectually dull. With respect to both warmth and reliability, males and females within each agonistic group are very similar, and the agonistic groups are very different. With respect to intellect, male and female protagonists are closely matched, and both display much more intellect than antagonists of either sex. Female antagonists display least intellect.

To summarize, in the male and female populations in these novels, universal criteria of mate selection appear in the way evolutionary psychology would lead us to anticipate, but these average differences for the population of all characters are overshadowed by the contrast between protagonists and antagonists. The contrast in mate selection criteria is concordant also with the contrasts in motives and in personal qualities. Warmth, intellect, and

reliability are chief markers of protagonistic status. Social dominance, status-seeking, and the pursuit of wealth are markers of antagonistic status.

4. Discussion of Results

At least two large interpretive hypotheses present themselves for consideration. One hypothesis is that in this period moral norms distort the depiction of human nature. Protagonists represent unrealistic, sentimental standards of socially and culturally proactive values – values of warmth, reliability, and intellect. Antagonists represent ordinary human tendencies toward status seeking and the acquisition of wealth, and these tendencies are stigmatized by being associated with personal qualities of coldness, intellectual dullness, unreliability, and a proclivity for social domination.

The second hypothesis is that in this period the economy of motives and values reflected in the novels constitutes a plausible organization of the elements of human nature. The value structure of the novels emphasizes pro-social qualities and qualities of intellect, but both social adaptations and the human intelligence are in fact part of an evolved human nature. The protagonists in these novels represent an organization of the elements of human nature more balanced and complete than that which is represented by the antagonists. One chief function of the novels is to articulate an imaginative conception of a fully developed human nature within the constraints of the cultural economy available in the period.

Of these two hypotheses, the second accords best with the evidence of the study. Antagonists are socially and intellectually deficient, and those deficiencies are associated also with stunted or distorted development of the species-typical sexual character. Male antagonists choose mates for wealth and status – criteria of mate selection that cross-culturally are typically female – and female antagonists choose mates for physical attractiveness – a criterion of mate selection that cross-culturally is typically male.

All cultures represent some specific organization of the elements of human nature. The novels of this period reflect values that inform the cultural organization of these elements within their own society. The ethos of Victorian novels is one in which prosocial and culturally active qualities are given preference over qualities of greed and ambition. Our assessment of the degree to which this cultural ethos works either with or against the grain of human nature ultimately depends on our own conception of human nature.

6. Further Research

There were three chief limitations in the present study: (a) We had too few characters to reach statistical significance on some issues of interest, and especially on differences in the depiction of characters by male and female novelists. (b) The use of summaries rather than primary texts inevitably degrades the quality of information and reduces confidence in the results. (c) We did not conduct intercoder reliability tests for this study. (Such tests were conducted on some of the other studies that are cited in note 7. Those previous studies used similar teams of student coders.) Despite these limitations, the findings were interesting and important enough to make us think that the basic design of the study was sound and that further research, conducted with refinements in our procedures, would be worthwhile.

We have now enlisted the aid of two other collaborators (John Johnson and Daniel Kruger), both psychologists, and both researchers with experience in web-based questionnaires. We have revised and expanded the questionnaire, and for personal qualities have incorporated a set of questions keyed directly into the Big Five personality system. We have produced a list of about 2,100 characters from 202 novels (53 novelists) and have invited scholars of Victorian fiction to visit the website and fill out questionnaires. We shall test the hypothesis that there is a meaningful consensus in the understanding of the construction of character in the novels of this period. By identifying the elements that enter into the common understanding of character, we shall be providing data that can be used, as the data in this study have been used, to assess the moral universe of the novels and to bring that moral universe within the scope of empirical analysis. Our broader goals are (a) to help to integrate literary study with Darwinian social science; (b) to create knowledge about literature that can be quantified, replicated, and falsified; and (c) to produce knowledge about literature that is genuinely cumulative and progressive.