LIFE HISTORIES: ONTOGENY, PHYLOGENY AND NARRATIVE STRUCTURE
IN THE MODERNIST BILDUNGSROMAN

by

Daniel Aureliano Newman

A thesis submitted in conformity with the requirements
for the degree of Doctor of Philosophy
Graduate Department of English
University of Toronto

© Copyright by Daniel Aureliano Newman 2013
ABSTRACT:

LIFE HISTORIES: ONTOGENY, PHYLOGENY AND NARRATIVE STRUCTURE IN THE MODERNIST BILDUNGSROMAN

Daniel Aureliano Newman

Doctor of Philosophy, 2013

Department of English

University of Toronto

This thesis offers new perspectives on the modernist bildungsroman, a genre currently enjoying much attention in Modernist Studies. Though modernist deformations of the Bildung plot are typically read symptomatically, I propose that in several cases these deformations are structural innovations reflecting contemporary discoveries in embryology, genetics and evolutionary theory. These discoveries offered models for exposing and subverting the bildungsroman’s historical (aesthetic, political, scientific, ideological) association with recapitulation—the theory that an individual’s development (ontogeny) replays the evolution of its species (phylogeny).

Chapter One reads Joyce’s A Portrait of the Artist as a Young Man as a clear example of a Bildung plot in which the traditional parallel between ontogeny and phylogeny is broken: Stephen Dedalus’s artistic maturation is obstructed by repeated returns to the personal, national, mythical and prehistoric past. Chapter Two considers Forster’s Howards End as a bildungsroman stretched beyond the realm of Bildung into that of genetic transmission. Exploiting Mendelism’s naturalization of atavism, Forster counters the genre’s inherited associations with recapitulation, progressivism and entropy. Chapter Three examines Aldous Huxley’s Eyeless in Gaza, a bildungsroman remarkable for its
extreme anachronies. Huxley’s rewriting of the *Bildung* plot is informed by research, by his brother Julian and others, on the possibility of inducing metamorphosis in a strange amphibian, the axolotl, which usually fails to reach morphological adulthood. Chapter Four proposes Woolf’s *Orlando* as a missing link between the seemingly esoteric biological engagements of the three aforementioned novels and the organicist aesthetics that characterize modernist theories of the novel. Relating *Orlando*’s metafictionality to criticism by Henry James, Forster and others, I corroborate current attempts in Modernist Studies that read the bildungsroman as a privileged testing ground for modernist aesthetics, ethics, politics and historiography. Connecting the four chapters is the common strategy of decoupling individual development from historical change and celebrating some kind of anti-chronology that I call *reversion*; informed by new biological theories of growth and evolution, reversion is enacted formally through manipulations of temporal structure. Thus the modernist bildungsroman enlarges, with help from biology, the range of possible and acceptable developmental trajectories.
ACKNOWLEDGEMENTS

Many people helped me develop this dissertation from an inchoate germ to its current but of course unfinished incarnation. I was blessed by an excellent supervisory committee. My supervisor Cannon Schmitt has a way of asking tough questions that flatter and enable deeper thought, and from his apparently limitless expertise I have benefited endlessly, within and beyond the dissertation. From his enthusiasm I learned to value—and sometimes even to understand—my own ideas; I couldn’t have asked for a better mentor. Melba Cuddy-Keane has had a complementary effect: in seminars as in meetings, her commitment to literary studies and her eye for detail and nuance have contributed more than I can say to my growth as a scholar. I am also indebted to Greig Henderson for his stylistic interventions and his equally necessary humour. Special thanks to my external examiner Gregory Castle for his thorough, thought-provoking and generous criticisms and encouragement, as well as to Rick Greene and Dan White for their valuable questions and suggestions on how to improve my study.

The dissertation was written with financial support from a Joseph-Armand Bombardier Canada Graduate Scholarship from the Social Sciences and Humanities Research Council of Canada; the English Department at the University of Toronto; the Faculty of Arts and Science at the University of Toronto; the Avie Bennett Foundation; the Anne Tanenbaum Scholarship in English Literature; and Massey College.

Many people at the University of Toronto helped me with the project—some materially, others more indirectly, but all significantly. Chief among them are Elizabeth Harvey, Heather Jackson, Randy McLeod, Carol Percy, Dana Seitler and Paul Stevens, as well as Sangeeta Panjwani, Marguerite Perry and Tanuja Persaud, in the English...
Department; Christine Lehleiter in German Studies; Helen Rodd in Ecology and Evolutionary Biology; John Fraser and Anna Luengo at Massey College; and Rachael Cayley, Peter Grav and especially Jane Freeman, to whom I am boundlessly grateful, at the English Language and Writing Support. The staff at the Thomas Fisher Rare Books Library helped me access and reproduce images from late-nineteenth-century science texts. At Concordia University, thanks to André Furlani, Daniel O’Leary and most of all to Judith Herz, whose encouragement has quite literally allowed me to come this far.

Thanks to my friends and colleagues Tony Antioniades, Claire Battershill, Stewart Cole, Fiona Coll, Trevor Cook, Lindsey Eckert, Adam Hammond, Heather Jessup, Pascale Manning and Kathleen Ogden. Special thanks to Inder Marwah for taking his afternoon coffee at the same time as I, and for being on hand to be quizzed about Kant, Mill or Hegel. My mother Adèle Doyon’s support and enthusiasm is behind everything I have done; thanks also to my father Jack and siblings Elise and David, and to John and Marion Davis, for help in every conceivable way. In Loïc Édouard and Tevia Émile, both born while I wrote the dissertation, I continually find reason to do well, to remember the importance of reading and to see the natural world with new, fascinated eyes. Finally, my greatest thanks go to Kellie Davis, whose patience and love are woven into every word and hidden between every line I wrote. Among the innumerable ways in which she made this study possible, I’ll single out this one only: she showed me how to love fiction as I do now, so I quite literally owe my vocation and my development to her.
# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>List of Figures</td>
<td>vii</td>
</tr>
<tr>
<td>A Note on Terminology</td>
<td>viii</td>
</tr>
<tr>
<td>Introduction: Ontogeny, Phylogeny and Narrative Structure in the Modernist Bildungsroman</td>
<td>1</td>
</tr>
<tr>
<td>Chapter One: Experience for the Millionth Time: Words, Recapitulation and the Structure of <em>A Portrait of the Artist as a Young Man</em></td>
<td>61</td>
</tr>
<tr>
<td>Chapter Two: Inheritance and Entropy in <em>Howards End</em>, Forster’s Mendelian Bildungsroman</td>
<td>100</td>
</tr>
<tr>
<td>Chapter Three: “The Education of an Amphibian”: Neoteny, Anachrony and <em>Bildung</em> in Aldous Huxley’s <em>Eyeless in Gaza</em></td>
<td>152</td>
</tr>
<tr>
<td>Chapter Four: The Book Adapted to the Body: Woolf’s <em>Orlando</em> as Bildungsroman and <em>Fiction Théorique</em></td>
<td>207</td>
</tr>
<tr>
<td>Conclusion</td>
<td>260</td>
</tr>
<tr>
<td>Works Consulted</td>
<td>268</td>
</tr>
</tbody>
</table>
LIST OF FIGURES

Figure 1: Relationship between ontogeny and phylogeny in Haeckelian recapitulation theory 13

Figure 2: Arrested development and reversion according to recapitulation theory 39

Figure 3: Comparison of recapitulation and neoteny as different manifestations of heterochrony 55

Figure 4: Visual comparison between blending inheritance (in Weismann) and non-blending inheritance (in Mendel) 106

Figure 5: The genealogies (Fig. 5a) and genealogies + other inheritances (Fig. 5b) that form the plot of Howards End 130

Figure 6: Descendant versus ascendant genealogies 133

Figure 7: Hybrid descendant-ascendant genealogy 137

Figure 8: Story order and discourse order in Great Expectations and Eyeless in Gaza 173
A NOTE ON TERMINOLOGY

Many words and ideas in this study are unfamiliar to literary scholars, but this is a minor concern compared with the byzantine, protean and often idiosyncratic lexicon of early-twentieth-century biology. For concision and parsimony, I generally prefer to commit anachronism rather than to wade into a semantic quagmire (e.g., I tend to use the modern gene and allele instead of the contemporary pangene, id or unit character). I usually favour general terms unless specialized words serve the argument. This said, I try as much as possible to use scientific terms accurately. The most important distinction is between development and evolution, words often used interchangeably. I reserve development and its cognates for individual (ontogenetic) change and evolution and its cognates for historical, population or species (phylogenetic) change (my quotations, however, sometimes include less precise delineations of these two terms). Progress I use strictly to mean gradual amelioration over time.

Narratological language is more familiar but also problematic. I use story and discourse strictly as technical terms equivalent to histoire and récit or fabula and syuzhet. By temporal structure I mean the relation between story and discourse, in terms of tempo or order of events. Plot I use more loosely to mean a chartable series of connected events, without necessarily inferring causality; narrative structure refers to a specific work’s overall plot trajectory, usually in relation to genre.

Given the historical nature of this study, I self-consciously but silently use words that would require awkward qualifiers like “so-called” (e.g., savage, degenerate, unfit and primitive). When I use these words, they should be read between imaginary scare quotes.

Translations from French are mine unless otherwise indicated in “Works Consulted.”
INTRODUCTION

LIFE HISTORIES: ONTOGENY, PHYLOGENY AND NARRATIVE STRUCTURE IN THE MODERNIST BILDUNGSROMAN

“Evolution is the law of life, and there is no evolution except towards Individualism. Where this tendency is not expressed, it is a case of artificially-arrested growth, or of disease, or of death.”
—Oscar Wilde, “The Soul of Man under Socialism” (Plays 43)

“Societies of men are just like individuals, in that both at any given moment offer ambiguous potentialities of development.”
—William James, “Great Men and their Environment” (Will 227)

“Ontogeny does not recapitulate phylogeny: it creates it.”
—Walter Garstang, “The Theory of Recapitulation” (82)

The modernist bildungsroman finds its prototype in episode fourteen of Ulysses, “Oxen of the Sun.” I recognize the oddity of my claim: no one has even called “Oxen” a bildungsroman at all. Comparing it to A Portrait of the Artist as a Young Man, which clearly is a bildungsroman, we find that “Oxen” lacks two key aspects of the genre: time and a protagonist. Clocking in at just two hours, it precludes any character transformation but the most abrupt—and abruptness would defy the bildungsroman’s traditionally gradual, cumulative and linear mode of development (Boes, “Modernist” 231; Boulanger 301). And though Stephen Dedalus also appears in “Oxen,” he isn’t a central character and he doesn’t develop: if he grows at all, he grows drunker.

Then again, critics almost all recognize that “Oxen” has a developmental structure—a hallmark of the bildungsroman. In Portrait, this structure is manifested through a style that grows more complex as Stephen develops in body, mind and sense of purpose. In “Oxen,” even without time or protagonist, a developmental narrative emerges from the more or less chronological succession of prose styles from Anglo-Saxon to twentieth century slang. Robert Spoo has persuasively argued that in Ulysses, even after Stephen has ceased to function as a recognizable literary character, his growth continues in the
“textual praxis” of style and form (13). “Oxen” transposes the bildungsroman’s plot from the individual onto history; and if its story time is a mere two hours, several centuries of literary change are compressed into its 41 pages. As development it is unusual, but unusual development is one of the key features of the modernist bildungsroman.

Which brings us to a second difficulty: the very idea of a modernist bildungsroman is, to many scholars, problematic. In traditional bildungsromans, according to Rita Felski, self-understanding is portrayed as gradual and accumulative, an irreversible process of development through successive stages. The unfolding of the text is directed toward this goal of retrospective self-knowledge, and all the aspects of the text gain their significance in relation to the developmental plot. (Beyond 136)

A stepwise, gradualist narrative seems antithetical to the epiphanies and time-shifts of modernism, and its meliorism countered by modernist doubts about the truth or wisdom of inexorable progress, which we find in T. E. Hulme’s insistence that “Man is an extraordinarily fixed and limited animal whose nature is absolutely constant” (61) and in Rupert Birkin’s question in Women in Love: “Why strive for a coherent, satisfied life? Why not drift on in a series of accidents—like a picaresque novel?” (340). To Weldon Thornton, indeed, the bildungsroman is “inherently conducive to an antimodernist perspective” (Antimodernism 65).

But recent work, inspired largely by Felski’s “move to reinterpret the novel of formation as a genre that intimately links personal to historical development” (Boes “Modernist” 236), has demonstrated aesthetic and formal continuities between the traditional bildungsroman and its experimental counterparts of the early twentieth century. Modernists object not to development itself but, rather, to its ideological
cooptation by patriarchal, imperialist and other grand narratives. Most explicitly, Gregory Castle argues that Bildung, of the specifically “aesthetic-spiritual variety developed by the Weimar theorists” (63), better suits modernist ideals of self-cultivation than the pragmatic ideology of social integration that, according to Franco Moretti, defines the Victorian bildungsroman (Way 80). Peter Brooks has similar dynamics in mind when he calls “ambition the vehicle and emblem of Eros, that which totalizes the world as possession and progress” (39), a formulation that stress the links between nineteenth-century ideals of development and imperialism.

“Plots of ambition” with female protagonists, Brooks notes, bear superficial structural similarities to their male counterparts, but they are “in fact a reinterpretation of the vectors of plot” (39). Indicating this “counter-dynamic” (39), Brooks anticipates how the bildungsroman (a version of plotted ambition) has been theorized in Modernist Studies in the wake of Felski’s Beyond Feminist Aesthetics. In his valuable review on the topic, Tobias Boes argues that modernist bildungsromans retain the genre’s “central link between individual and societal development, while framing both in a new rhetorical vocabulary” (“Modernist” 235); they supplement and confound without quite denying the Bildung plot, preserving at least traces of its linear, hypotactic and gradualist model of self-realization—that thematic as well as formal narrative mode that Scholes and Kellogg call “developmental” (169; see also Hirsh 295; and Redfield 42–43).¹ But to these defining narrative dynamics the modernist bildungsroman adds disruptive or antithetical effects like anachrony, parataxis, fragmentation, epiphany, adjacency and

¹ Marc Redfield puts it well: “The ‘content’ of the bildungsroman instantly becomes a question of form, precisely because the content is the forming-of-content, ‘Bildung’—the formation of the human as the producer of itself as form” (42). The bildungsroman thus thematizes Bildungsformen (the development of form) and formalizes Bildungsinhalten (the development of content).
saltation. These mark what Jesse Matz calls “modernist time,” which “in contrast to ‘conventional,’ spatial views of time,” stresses “becoming” through formal experiments (194). But these effects aren’t new, Martin Swales notes:² they merely foreground a tension native to the bildungsroman from its beginnings, “the tension … between the Nebeneinander (the ‘one-alongside-another’) of possible selves within the hero and the Nacheinander (the ‘one-after-another’) of linear time and practical activity, between potentiality and actuality” (29). Goethe and his peers simply saw it as a tension between the “poetic” and “prosaic” (ibid. 23).

It is a tension familiar to Stephen Dedalus, who in Ulysses alternately tests his experience of the “nacheinander” and “nebeneinander” (37). And in A Portrait, the same alternation and interaction of modes literally shapes the narrative, which uneasily combines cyclical, instantaneous and chronological dynamics. The “Nacheinander of linear experience” has an “aesthetic correlative” in story (i.e., fabula) (Swales 31), or what Forster called “life in time” (Aspects 19), whereas the Nebeneinander permits non-chronological and non-causal connections. Thus modernist narratives are spatial as well as temporal and access, to cite Forster again, “life by values” (Aspects 19). In “Mr. Symons’s Essays,” Virginia Woolf imagines a brighter future for “the form of prose,” which “produces prolonged and cumulative effects” than for “the form of poetry,” which “produces instant and intense effects” (Essays II.70), but she goes on, in the essay and in her fiction, to suggest an integration of the two forms.

Swales describes the tension between sequence and association, actuality and potentiality, Nacheinander and Nebeneinander as a conflict between the ideal of

---

² Alison Boulanger and others similarly stress that the bildungsroman since Wilhelm Meister has always been “a genre rich in its own critique” (Boulanger 309).
individual freedom and the realities of societal life. In this sense, his model is closely
to Bakhtin’s take on the bildungsroman, which identifies a fundamental formal
and ideological contradiction inherent in the genre (Dialogic 350), the dialogic
interaction of two chronotopes that cannot fully cohere: “the time of human life, [and]
the time of historical time” (ibid. 250). ³ “History,” as Fredric Jameson famously puts it,
“is what hurts” (Political 102); it is, rejoins Stephen Dedalus, “a nightmare from which I
am trying to awake” (Ulysses 34).

“One cannot change alter the movement of history,” writes Michael Levenson, “but it
is possible to change the form and style of one’s response” (Modernism 80). In “Oxen of
the Sun,” Joyce exposes two chronotopes, the biographical and the historical, as
overlapping narratives of gestational development and literary evolution. He calls the
episode’s technique “Prose Embryo-Foetus-Birth,” suggesting a re-writing of Portrait of
the Artist in which “Stephen the embryo” and English literature follow the same
trajectory at different temporal scales. The analogy is itself a central, though usually
covert, feature of the bildungsroman—the “soul-nation allegory” that defines maturity
and nationhood “as mutually reinforcing versions of stable identity” (Esty 13, 39). This
allegory, as Jed Esty demonstrates, tends to break down in modernist bildungsromans,
which replace it with new and often inharmonious correspondences between individual
growth and historical becoming. The breakdown of the soul-nation allegory is not
restricted to novels set in the colonial peripheries examined by Esty. It is a central
concern of D. H. Lawrence, for example; in The Rainbow, a novel which blurs the
generic boundaries between bildungsroman (individual development) and the family saga

³ This may explain why Robert Spoo refers in one place to the “witty, counterelectological model of history
offered in ‘Oxen of the Sun’” (8) and elsewhere “to the teleological structure of ‘Oxen’” (13).
(genealogical change and continuity), Ursula Brangwen takes Anton Skrebensky to task for his willingness to fight for his country: “we aren’t the nation,” she counters his assertion that the nation needs individuals to sacrifice themselves for the greater good; the implication is that if everyone believed as she did, “there wouldn’t be a nation. But I would still be myself” (356). The soul-nation allegory is similarly challenged in “Oxen,” whose individual and historical narratives only seem progressive until the episode ends not with a new, distinctly more advanced style but, rather, in chaos. The final stage of the episode’s recapitulatory structure thus ironically proclaims, as the new acme of English prose, a jumble of slang and apocalyptic preaching (significantly, no part of Ulysses better anticipates the language of Finnegans Wake); then again, it also suggests degeneration and decline—the mode, Esty notes, of the “antbildungsroman” (13).

It is this simultaneous and overt gesture towards and deformation of recapitulatory logic that makes me call “Oxen” the prototypical modernist bildungsroman. At first glance it seems typical of nothing but Joyce’s will to obscurity. Yet, by rewriting literary history as “the natural stages of development in the embryo and the period of faunal evolution in general” (Joyce, qtd. in Gifford, Annotations 408n1), “Oxen” bares its devices and exposes a biological structure that lies latent in several contemporary bildungsromans. It is exemplary because it stresses the overlap and tensions between two biological processes: individual development and growth (or ontogeny) and evolutionary history (or phylogeny). The complex correlations of ontogeny and phylogeny, in surprisingly many modernist bildungsromans, result in narrative deformations of the genre’s traditional narrative structure, thus challenging, modifying or enlarging its
underlying politics and vision of individuality. But these relations are advertised only in “Oxen of the Sun.”

Overlooking or even rejecting the possibility of such relations between ontogeny and phylogeny, critics like Thornton (“Voices” 269n38) and, surprisingly, Robert Janusko (4) have cautioned against believing Joyce’s hints about “faunal evolution” in “Oxen.” Leo Bersani goes as far as rejecting the bulk of “Oxen” scholarship since Stuart Gilbert’s 1930 study of *Ulysses*, which first aired the parallel between embryogeny and literary history. How, wonders Bersani, “is the historical transformation … of English prose styles ‘parallel’ or ‘analogous’ to … the biological development of an embryo in a womb?” Not at all, argues Bersani, because “historical transformation … is of course not a development or the maturation of an organism” (222). Here Bersani misses a crucial point. For Joyce and most of his contemporaries, there was no question about a parallel between phylogeny and ontogeny, which was widely understood in relation to the hugely influential biological theory of recapitulation.

Recapitulation, which Gillian Beer calls “the most productive, dangerous, and compelling of creative thoughts for our culture” (*Woolf* 6), has become synonymous with Ernst Haeckel, the German biologist who coined the classic formulation, “ontogeny recapitulates phylogeny” (*Gould, Panda* 246). According to this view, as Stephen Jay Gould rather poetically puts it, “an animal climbs its own family tree during embryological development” (*ibid.* 246). In his 1890 address to the British Association for the Advancement of Science, A. Milnes Marshall provides a more technical explanation whose language hints at the progressivism attached to the theory:
each animal bears the mark of its ancestry, and is compelled to discover its parentage in its own development; ... the phases through which an animal passes in progress from the egg to the adult are no accidental freaks, no mere matters of developmental convenience, but represent more or less closely, in more or less modified manner, the successive ancestral stages through which the present condition has been acquired. (827)

By 1926, when recapitulation was moribund as a biological theory, Sylvia Garstang and Walter Garstang could look back at the 1890s with ironic nostalgia: “in those days zoologists were literally dominated by the recapitulation theory of development” (81).

But the theory had remarkable staying power even after biologists had abandoned it, and it is likely that Joyce thought himself on the cutting-edge of evolutionary theory when he wrote “Oxen.” And the episode’s technique is more accurately recapitulation than “embryonic development” (Joyce, qtd. in Gifford, Annotations 408n1): though its nine-part structure and correspondences to gestational stages are developmental, mimicking a foetus’s growth, the simultaneous sequence of parodies is historical and evolutionary. The episode’s motto might be “ontogeny recapitulates philology.”

This view of “Oxen” matters because it signals, with necessary precision, the kind of narrative Joyce was mimicking and challenging—and, of course, the kind of alternative he was proposing—with his modernist bildungsroman. Recapitulation harkens back at least to Ancient Greece but came to the fore of philosophy in Enlightenment and romantic Germany, where it was inevitably implicated with emerging theories of Bildung. As Pauli Siljander and Ari Sutinen explain the concept of Bildung, “In its most general meaning, the issue is the individual-historical and species-historical
processes by which a natural creature becomes a cultural creature” (4). Recapitulation’s particular appeal in late-eighteenth-century thought undoubtedly rested partly in its congeniality with the “nation-soul allegory” (Esty 4), which merges the Bildung plot with “developmental historicism” (an umbrella term for meliorist philosophies as various as Hegelism, positivism, whiggism and evolutionism, which see history as organic and progressive; Esty 15; Adcock and Bevir 74). The preface to Hegel’s *Phenomenology of Spirit* (1807) offers an excellent illustration:

   The single individual must … pass through the formative stages on a way that has been made level with toil. Thus, as far as factual information in concerned, we find that what in former ages engaged the attention of men of mature mind, has been reduced to the level of facts, exercise, and even games for children; and, in the child’s progress through school, we shall recognize the history of the cultural development of the world traced, as it were, in silhouette. (16)

This “development,” which is both individual and historical, assumes that each stage is superseded by its successor: maturity supersedes youth, which superseded childhood. In Hegel’s teleological account, then, “the progressive unfolding of truth” inevitably involves transcending “the diversity of philosophical systems” of earlier times (2). To illustrate the point, he turns to the natural world:

   The bud disappears in the bursting-forth of the blossom, and one might say that the former is refuted by the latter; similarly, when the fruit appears, the blossom in shown up in its turn as a false manifestation of the plant, and the fruit now emerges as the truth of it instead. These forms are not just distinguished from one another,
they also supplant one another as mutually incompatible. Yet at the same time their fluid nature makes them moments of an organic unity. (2)

Hegel beautifully expresses the organic progressivism inherent in the Bildung plot, and clearly shows how easily such ideas would migrate into the burgeoning life sciences.

For as a grand narrative, recapitulation became especially powerful when it was formalized by Haeckel as the “biogenetic law” (Mayr 474). As a “universal law” (Garstang and Garstang 82), recapitulation turned analogies between various developmental processes into actual homologies. Herbert Spencer, for example, saw “the growing embryo” as a manifestation of the same law, “the law of all progress…. from the earliest traceable cosmical changes down to the latest results of civilization” (3). As a scientific law, recapitulation updated the age-old correspondence of individual development and history in a naturalistic, Newtonian universe: thus Haeckel would explain “Phylogenesis” as “the mechanical cause of Ontogenesis” (qtd. in Garstang, “Theory” 81, my emphasis). Recapitulation theory therefore enforced a normative model of individual growth (and national development, as Esty convincingly argues) which naturalizes forward and continuous momentum towards mature self-realization. By the mid-nineteenth century, observes Jessica Straley, biological recapitulation had become inextricably tied to pedagogy (586), as it later would be to developmental psychology. Such is the narrative along or against which a bildungsroman’s protagonist develops.

Importantly, recapitulation theory also offered a conveniently concrete set of animal, human and pathological scapegoats to account for deviations from the lawful developmental trajectory. As G. Archdall Reid explains in The Laws of Heredity (1910),
since the general resemblance between parents and offspring is due to the fact that
the latter in their own development closely recapitulate the development of the
former, a progressive variation implies … a complete recapitulation with an
additional step. On the other hand a retrogressive variation implies an incomplete
recapitulation, an abbreviation…. It follows that retrogression implies a reversion
to the ancestral type. It further follows that … ancestors are represented by the
individual, not en masse but in orderly succession. The so-called contributions of
ancestors are nothing other than reversions, that is to say, failures to recapitulate
the life-history beyond the points reached by the ancestors (208–09)

In an 1877 essay on “The Scientific Movement and Literature,” Edward Dowden extols
the same “scientific doctrine of self-development”: “we must recognize as one element in
natural self-development the moving upward of which Mr. Tennyson speaks:— ‘Move
upward, working out the beast, / And let the ape and tiger die’” (577). It is easy here to
see how recapitulation theory promotes a powerful normative model of individual and
societal development. If recapitulation demands that we be like animals in childhood, it
promises that this animality is but a transitory step towards a fully human maturity—as
long, of course, as development is successful.4

The normative model, as Esty, Moretti and Redfield all argue, is written into the very
structure and ideology of the Victorian bildungsroman, whose causal and teleological
assumptions are best expressed by one of its heroines, Jane Eyre: “circumstances knit
themselves, fitted themselves, shot into order: the chain that had been lying hitherto a

---

4 Recapitulation is essential to Freud, who theorized neurosis as an ontogenetic failure to supersede the
“savage” stage (viz. Totem and Taboo: Resemblances between the Mental Lives of Savages and Neurotics).
The ideal of Freudian treatment, then, is to unblock development, propelling development forward in order
to transcend the animal, primitive and childish stages of foetal or juvenile ontogeny.
formless lump of links, was drawn out straight—every ring was perfect, the connection complete” (Brontë 390–91). Though this model is, in actuality, rarely endorsed unequivocally in Victorian fiction, it is explicitly and often shockingly travestied in the modernist bildungsroman. As the narrator in Orlando puts it, “growing up … is not necessarily growing better” (282). Joyce similarly subverts developmental narratives; his fiction, Spoo argues,

eschews the nineteenth-century developmental hypothesis, replacing it with a mode of emplotment that is resolutely static and counterteleological. By means of ironic textures, narrative gaps, and ambiguous resolutions, Joyce’s fictions … resist conventional temporal development and moral(istic) closure. (24)

Mark Gaipa is therefore right to insist that critics attend carefully to recapitulation theory when they read “Oxen” as a Joycean statement about literary history and Stephen’s development.

Recapitulation, as Joyce suggests in his letter to Budgen, is written into the episode’s structure, but it is also discussed in the episode, a fact that, to my knowledge, has eluded everyone. It occurs, significantly, when Stephen and Vincent Lynch reprise—now in biological and ethical rather than aesthetic terms—their discussion from A Portrait of the Artist. Lynch argues that infant mortality is “in the long run beneficial to the race in general in securing the survival of the fittest” (14.399) because “such deaths are due to some law of anticipation by which organisms in which morbous germs have taken up their residence (modern science has conclusively shown that only the plasmic substance can be said to be immortal) tend to disappear at an increasingly earlier stage of development” (14.399). Though Lynch does not say the word, recapitulation is clearly on
his mind when he speaks of “germs” (genetic factors) disappearing “at an increasingly earlier stage of development.” Lynch refers to “terminal addition,” one of the two fundamental mechanisms involved in recapitulation, which ensures that each generation improves on its precursor through the addition of a new terminal stage at the end of ontogeny; this pushes and condenses the previous end stages earlier and earlier (this “condensation” is the second fundamental mechanism in recapitulation [Gould, *Ontogeny* 7]). Lynch’s progressivism echoes that of Reid’s biological account: “progressive variation implies a prolongation of the parental development, a complete recapitulation with an additional step” (208, my emphases; see Fig. 1).

**Figure 1.** A highly simplified cartoon of recapitulation. As organisms age (develop), they pass through the developmental stages of their ancestors (represented by rectangles of various colours). Recapitulation proceeds by stepwise accretion, by the addition of new stages at the end of the sequence of past stages. “Higher” organisms therefore climb through “primitive” stages before completing their development; here this progress is represented by movement rightwards on the $x$ axis and upwards on the $y$ axis.
“Putting in a very unsavoury light the tendency above alluded to” (Ulysses 399), Stephen voices the scepticism of recapitulation and progress that motivates so many modernist deformations of the bildungsroman. Stephen, “the embryo philosopher” (ibid. 399), is quick to connect Lynch’s heartless dismissal of individual pain to Ireland’s subjugation by the British. By calling the doomed baby “a staggering bob... newly dropped from its mother” (399), he fits Lynch’s Social Darwinism into the episode’s bovine motif; but he also winks at Swift’s “Modest Proposal,” the most memorable exposé of colonialism’s truncating effects on the developmental trajectory of both Irish children and the Irish nation. Most sinister is Lynch’s implication that “the survival of the fittest” requires infant mortality, for they are the necessary victims of the ultimately desirable outcome of pushing back the “morbous germs” earlier and earlier in ontogeny until they “disappear.” By this logic, it is a short step from Tennyson’s vision of individual growth by “working out the beast” (CXVIII.27) to Kurtz’s vision of imperial progress in Heart of Darkness, which, assuming that “we whites, from the point of development we had arrived at, ‘must necessarily appear to them [savages] in the nature of supernatural beings,”’ ends with a call to “‘exterminate all the brutes!’” (118, original square brackets). Stephen, here if not always a reliable spokesman for Joyce, reads personal and historical violence where Lynch suggests merely a lamentable but necessary pain. To Stephen, Lynch’s eugenic argument is as complicit in British colonial violence as the Englishman Haines’s apology (“it seems history is to blame” [20]) or the Anglo-Irish Mr. Deasy’s own Protestant brand of developmental historicism (“all human history moves towards one great goal, the manifestation of God” [34]). We therefore risk

---

5 Stephen echoes Swift’s phrase, “a child just dropped from its dam” (52).
misreading or undervaluing Stephen’s protest if we fail to recognize how “Oxen,” by mimicking and subverting recapitulatory logic, formalizes his argument with Lynch.

Gaipa is therefore right to conclude that attending to the episode’s biological engagements is necessary for elucidating its meanings and politics. But I would say the same of many other, if not all, modernist bildungsromans. The genre, after all, concerns the formation and development in all their instantiations: social, spiritual, cultural, intellectual and vocational, but also physiological and morphological.

The bildungsroman offers an especially literal case of the embodiment that Daniel Punday ascribes to modern narrative in general. In *Narrative Bodies: Toward a Corporeal Narratology*, he argues that the history of the novel is bonded to developmental biology (17), so that new theories of sexual generation and gestation redefine not only notions of the body and identity but also the way we tell, read and theorize narratives. These new theories therefore “produce a new way of thinking about character identity as the basis for narrative” (41). And as Anne-Julia Zwierlein argues in her valuable essay on habit formation and biology in the nineteenth-century British bildungsroman, “the nexus of biology and society” is something “that Bildungsromane have always been concerned with” (336). Given the historical correlation between narrative and “a modern way of thinking about conception and fetal development” (Punday 36), the modernist bildungsroman emerges as a privileged discursive site in which formal and stylistic experimentation reflects the increasingly sophisticated sciences of heredity, embryology and morphology in the late nineteenth and early twentieth centuries.
Modernist narratives have much in common with those in the emerging fields of experimental embryology and laboratory biology, as both Susan Squier and Christina Alt argue. “Oxen of the Sun” is, again, paradigmatic, but Huxley’s *Point Counter Point* is more explicit: its protagonist, the novelist Philip Quarles, thinks modern life demands a “strictly biological” approach to literature (320); he is duly known as the “Zoologist of Fiction” (92). Similar arguments lurk unadvertised in many other modernist novels. The relationship between biological conceptions of the body and the development of new narrative possibilities continues in recent, arguably neo-modernist works by Ian McEwan, Zadie Smith and Jeffrey Eugenides, among others. In *Middlesex*, Eugenides presents the mind and body of Cal, a genetically male pseudo-hermaphrodite, as a battleground for competing sociological and scientific narratives of child development. The contradictory narratives inevitably confuse Cal’s sense of self, causing his growth to depart from those expected in a family saga, a romance novel and, of course, a bildungsroman.

Like the family saga, a genre with which it often merges, the bildungsroman’s very structure implies biological change—even when the text is silent about the body. For Bakhtin, the *Bildung* narrative is shaped by socio-cultural “‘biographical time’ (birth, childhood, school years, marriage)” but also by “‘biological time’ (the hero’s age, his progress from youth to maturity)” (*Speech* 17, 11). In modernist bildungsromans like *Tono-Bungay, Sons and Lovers* and *Jacob’s Room*, momentous narrative events are catalyzed by puberty, sexual desire and frustration, and changes in physical ability and appearance. Joyce leaves no doubt that Stephen is driven by his “monstrous reveries” (*Portrait* 90) and his pubescent body into the prostitute’s room, an encounter whose consequences radiate throughout the rest of the novel.
For this reason, my definition of the bildungsroman is slightly more restrictive than that of, say, Gregory Castle or Glenn Willmott, who include texts whose protagonists are adults from the beginning, like Gertie in the “Nausicaa” episode of Ulysses or the narrator-protagonist of Elizabeth Smart’s By Grand Central Station I Sat down and Wept (Willmott 142). Given my focus on biology and narrative structure, I define the bildungsroman as a novel charting the growth of a character across significant psychophysical changes, usually infancy or childhood to physical adulthood. This definition excludes works that have been called bildungsromans, but which highlight initiation or conversion during a single developmental phase (e.g., Women in Love, Tarr, At Swim-Two-Birds, The Catcher in the Rye). Modernist bildungsromans sometimes so radically transmute the movement from childhood to maturity that it seems to disappear; but they are bildungsromans as long as the basic developmental trajectory remains detectable in some form; in “Oxen,” for example, it is translated into a thematic and structural portrait of foetal development from conception to birth.

My view of the bildungsroman reflects the historical linkage between the notion of Bildung and theories of biological form and formation (Bruford 75): the bildungsroman is thus a literary counterpart of scientific models of growth, morphogenesis and metamorphosis. The term Bildung, indeed, frequently appears in scientific works of the late eighteenth and early nineteenth centuries. Johann Blumenbach explained biological development by inferring a Bildungstrieb, a formative drive; in 1830, Johannes Müller wrote a monograph on the Bildungsgeschichte (the story or history of formation) of the genital organs. Such biological uses, far from being esoteric and specialized, played a crucial part in aesthetic, ethical and philosophical understandings of Bildung.
\textit{Bildungstrieb}, for instance, helped Herder overcome the problem of mind-body dualism, allowing him to posit mind and body as different manifestations of the same underlying force (Beiser 150); it also played a role in Goethe’s theory of metamorphosis (Steigerwald 298–99) and helped Kant clarify his ideas on purposefulness without purpose (Lenoir 78–79).

For the Weimar Classicists, \textit{Bildung} was “a continuation of the formative process of nature” (Sax 241). To put it somewhat differently, biology was the special, scientific application of a more general metaphysical system (\textit{Naturphilosophen}) whose central assumptions were, as Gould writes, “an uncompromising developmentalism and a belief in the unity of nature and its laws.” Recapitulation, “an inescapable consequence of [this] particular biological philosophy” (\textit{Ontogeny} 35), was therefore part of a synthetic framework that, thanks largely to Herder, found organic developmentalism everywhere, in nations and artistic products as much as in living beings (Boes, \textit{Formative} 51).

Ontogenesis, the emergence of national character, poetic composition and the growth of the hero in a bildungsroman: all these processes follow the same underlying flux, which is, crucially, “unidirectional, moving ever from lower to higher” (Gould, \textit{Ontogeny} 35–36). Though scientists soon put aside \textit{Naturphilosophen}, its metaphors and basic structures often remained—and still remain—vital in biology. In the early twentieth century, for example, pioneers of experimental embryology like E. B. Wilson and T. H. Morgan exploited the language of education and formation—notably the German words \textit{Bildung} and \textit{Entwicklung}—that Goethe and his circle would have found familiar. The same is true of the bildungsroman, whose basic structure—its morphology—reflects a historical developmentalism as physical as it is cultural and spiritual.
Based on *Bildung*’s semantic polyvalence, Summerfield and Downward have suggested that the bildungsroman is less a strictly-delimited genre than a “spectrum” (5) of narratives. Each narrative might emphasize one or several developmental axes, including the physiological, morphological or “genetic” (1–2). The biological correlates of *Bildung* may have been overshadowed during the nineteenth century, but they would have been evident to late-century writers thanks to the rise of developmental psychology and the wide cultural reach of recapitulation theory (Gould, *Ontogeny* 115–66; Shuttleworth 4). The modernists’ candour about the body and its processes would only have sharpened their attention to biological growth and transformation. Dickens makes little of Pip’s puberty, but puberty is a major source of narrative interest and conflict for Maisie Farange, Stephen Dedalus and Paul Morel—and Dolores Haze. It’s impossible to dissociate their moral and psychological growth from their maturing bodies.

Foregrounding the body, the structurally and ideologically polymorphous modernist bildungsroman also tends to travesty the genre’s traditional emphasis on “gradual self-unfolding in which the self becomes progressively more conscious,” as Arthur Davies puts it in 1900 (qtd. in Abbott 5). In modernist bildungsromans, development—and therefore the generic structure—is foreshortened, truncated, stretched, unfinished, fragmented, cyclical, fitful. Tobias Boes has persuasively argued that even classical bildungsromans take issue, formally and otherwise, with the “sequential and additive understanding of history” (*Formative* 33), and that they pioneered a wealth of literary techniques whose startling variety is ignored in many studies that focus exclusively on the linear and forward-moving dimensions of the protagonist’s development. Such approaches overlook that the narrative logic of
Bildung is organic rather than mechanical in nature, which means among other things that experiences and insights from early points in the hero’s life tend to resurface in modified shapes at later stages of the formative process. Historical time in the Bildungsroman thus acquires an iterative as well as a sequential character, and the resulting asynchronicities undermine simplistic narratives about national consciousness and its putative quest for closure. (ibid. 34)

Boes is certainly right, though non-linearity and asynchronicity admit of degrees, modernist bildungsromans tending to fall farther on the spectrum of non-linearity and asynchronicity than their historical precursors. The developmental resurfacings and iterations Boes describes take on particular formal and thematic importance in Joyce’s Portrait and Huxley’s Eyeless in Gaza, as we shall see in Chapters 1 and 3.

Indeed, departures from sequence are often blatant in late-nineteenth- and early-twentieth-century bildungsromans. Instead of growing up and becoming socialized, protagonists fail to mature, like Dorian Gray. Alternatively, some protagonists mature monstrously, like Gregor Samsa or Florinda’s father in Woolf’s Jacob’s Room, who “died from the growth of his bones which nothing could stop” (65). Youth and age are also strangely mixed or inverted; in The Turn of the Screw, the children whom the governess is assigned “to watch, teach, ‘form’” (292) defy developmental expectations:

---

6 I focus on British, Irish and European examples, but American modernism is also full of arrested development. In Frank Norris’s Vandover and the Brute, Vandover can’t realize his potential because he is so adaptable that he, like Ernest Pontifex in The Way of All Flesh, can’t find a vocation; in Vandover’s case, the result is an atavistic reversion to a wolflike state. As a biological travesty of the aging process, Fitzgerald’s “The Curious Case of Benjamin Button” (1922) rivals “Oxen of the Sun.”
eight-year-old Flora is “not a child: she’s an old, old woman” (370), while Miles has “no history” and appears to be “beginning anew each day” (307).

These patterns are typically read as symptoms of modernity’s dislocations. According to Boes, they reflect the “transition from traditional metropolitan novels of formation and social affirmation to increasingly global and fragmentary narratives of transformation and rebellion” (“Modernist 231). In *Unseasonable Youth*, Jed Esty attributes the bildungsroman’s new manifestations to a globalized world full of “colonial contact zones” (Ireland, India, Dominica, Malaysia), “where imperialism—in its late and bloated form—unsetsles the bildungsroman and its humanist ideals, producing jagged effects on both the politics and poetics of subject formation” (2). This phenomenon reveals “a central … nexus between modernist aesthetics and modern colonialism: the disruption of developmental time in reciprocal allegories of self-making and nation-building” (2). Esty’s thesis, that stunted growth by modernist protagonists mirrors deferred development in colonized nations, is both compelling and illuminating.\(^8\) Expanding his focus from global to more local forms of power asymmetry, one could certainly extend his argument to cases of arrested development in home-grown English novels by, say, Forster, Huxley, Henry Green, Lawrence and Woolf.

While recent work reads the modernist bildungsroman symptomatically, my study interprets its structural and characterological deformations as a response to the persistent spectre of recapitulation enabled largely by new scientific insights into how organisms

---

\(^7\) The trope of arrested development is not solely modernist; see Andrews’ *Dickens and the Grown-up Child* and Nelson’s *Precocious Children and Childish Adults: Age Inversion in Victorian Literature*.

\(^8\) Willmott offers a remarkably similar argument for the modernist bildungsroman in Canada: “In the postcolonial bildungsroman … an isometry of nation and narration authorizes the figure of the individual as a determining form, and authorizes his or her transition from youth to maturity as a determining paradigm, to carry, to plot out, and to resolve if possible this existential anxiety attending the making of a home, a belonging” (23).
are formed and how their formation relates to their evolutionary history. Like Esty and others, I stress the historic specificity of modernist innovations, but I also extend this specificity to the idiosyncratic ways in which individual authors adopt and adapt circulating scientific ideas. Thus I show how Joyce exploits biology’s historical relationship with philology, and both of their relationships to Ireland’s history of invasions and rebellion; how Forster absorbs Mendelism into what would later be recognized as a sophisticated queer poetics; how Huxley draws on his familial and social proximity to cutting edge genetics and embryology in order to imagine a better, more peaceable form of human development; and how Woolf self-consciously refines the *Bildung* plot’s inherent organicism in order to complicate its narrative trajectory and, in addition, formulate a distinctly modernist theory of prose fiction.

**I** began by calling Joyce’s “Oxen” the prototypical modernist bildungsroman because, as Gaipa writes, “the recapitulatory structure of ‘Oxen’ has everything to do with its meaning” (197). My reading of “Oxen” suggests that in many post-Darwinian bildungsromans, character development follows not one but two simultaneous plots: the well-recognized developmental (or ontogenetic) plot and a more subtle evolutionary (or phylogenetic) plot. This structure has been adumbrated by some critics, but it hasn’t been investigated as a recurrent pattern in modernist fiction or as a significant point of contact between modernism and biology. When Christine Froula describes Stephen Dedalus’s fate in *Portrait* as “an ontogenesis that bodies forth [Joyce’s] theory of cultural phylogenesis” (3), she employs recapitulation as a metaphor. What I propose is a more concrete presence and function for biology in *Portrait* and the modernist bildungsroman
in general. Rather than conform to recapitulation’s alignment of ontogenetic and phylogenetic plots (in which the one replays the other in condensed form), the modernist bildungsroman lets the two plots diverge, converge or run in opposite directions.

*Point Counter Point* parodies the same biological dynamics as “Oxen,” but less abstrusely. For this reason it is—though not a bildungsroman—an excellent example of modernist fiction combatting recapitulation theory. Depicting Marjorie Carling’s pregnancy, Huxley demonstrates how well recapitulation suits optimistic narratives of individual and cultural improvement:

Something that had been a single cell, a cluster of cells, a little sac of tissue, a kind of worm, a potential fish with gills, stirred in her womb and would one day become a man—a grown man, suffering and enjoying, loving and hating, remembering, imagining. And what had been a blob of jelly within her body would invent a god and worship; what had been a kind of fish would create and, having created, would become a battle-ground of disputing good and evil; what had blindly lived in her as a parasitic worm would look at the stars, would listen to music, would read poetry.

(8)

Initially, this tiny embedded *Bildung* narrative appears earnest in portraying “a single cell” becoming “a grown man.” Any irony seems reserved for Marjorie’s indifference about the “astounding process” going on inside her (*ibid.* 8). But ultimately the optimistic picture of Marjorie’s baby’s development reflects her own naïve Protestantism rather than the narrator’s norms, for the novel repeatedly attacks such progressivism. Its characters, all of them stunted or otherwise infantile, give the unborn baby little hope for enlightened maturity: John Bidlake, an aging Don Juan, clings ungracefully to youth;
Spandrell is “Peter Pan … stuck at a sillier age” (137); Lord Edward is “a kind of child, a fossil boy preserved in the frame of a very large middle-aged man” (26); and Denis Burlap, obsessed with St. Francis, ends up with the lapsed virgin Beatrice “pretend[ing] to be two little children and ha[ving] their bath together” (435).

These contrasting visions of ontogeny are mirrored by contrasting visions of phylogeny, whose explicitness and clarity make them worth quoting in full. Huxley describes a diptych by the Lawrentian painter Mark Rampion, the “two Outlines of History.” The first, the Outline “according to H. G. Wells,” translates the optimistic ontogenetic trajectory of Marjorie’s baby into phylogensis “on the lines of a simple crescendo”:

A very small monkey was succeeded by a very slightly large pithecanthropus, which was succeeded in its turn by a slightly larger Neanderthal man. Paleolithic man, Neolithic man, bronze-age Egyptian and Babylonian man, iron-age Greek and Roman man—the figures slowly increased in size. By the time Galileo and Newton had appeared on the scene, humanity had grown to quite respectable dimensions. The crescendo continued uninterrupted through Watt and Stephenson, Faraday and Darwin, Bessermer and Edison, Rockefeller and Wanamaker, to come to a contemporary consummation in the figures of Mr H. G. Wells himself and Sir Alfred Mond. Nor was the future neglected. Through the radiant mist of prophecy the forms of Wells and Mond, growing larger and larger at every repetition, wound away in a triumphant spiral clean off the paper, towards Utopian infinity. The drawing on the right had a less optimistic composition of peaks and declines. The small monkey very soon blossomed into a good-sized bronze-age man, who gave
place to a very large Greek and a scarcely smaller Etruscan. The Romans grew
smaller again. The monks of the Thebaid were hardly distinguishable from the
primeval little monkeys. There followed a number of good-sized Florentines,
English, French. They were succeeded by revolting monsters labelled Calvin and
Knox, Baxter, and Wesley. The stature of the representative men declined. The
Victorians had begun to be dwarfish and misshapen. Their twentieth-century
successors were abortions. Through the mists of the future one could see a
diminishing company of little gargoyles and foetuses with heads too large for their
squelchy bodies, the tails of apes and the faces of our most eminent contemporaries,
all biting and scratching and disembowelling one another with that methodical and
systematic energy which belongs only to the very highly civilized. (213–14)

Through Rampion’s travesty of recapitulation, Huxley dissociates maturity and true
progress from the arrow of time—a pattern I will examine in every chapter of this
dissertation. Far from being inevitable and gradual, true maturity (represented by the size
of the figures) comes in phylogenetic starts and fits. Rampion gives voice to fears of
cultural and evolutionary decline that were rampant and often virulent in the early
twentieth century, but as I show in Chapter Three, by exploding the progressive
recapitulatory model Huxley imagines another sort of improvement more congenial with
his aesthetic, political and biological views.

Many contemporary bildungsromans similarly subvert the recapitulatory structure
native to their genre. Formally and thematically, they question the genre’s progressive
model of character (and plot) development by complicating the parallel between
ontogeny and phylogeny. Despite Huxley’s dig at Wells, a case in point is *Tono-Bungay*
Both bildungsroman and Condition-of-England novel, *Tono-Bungay* explicitly asserts the nation-soul allegory, linking George Ponderevo’s life story with “the great social organism of England” (66). But the allegory is strained: England’s progress becomes a “tumorous growth-process” of overpopulation and urban sprawl (102), while George’s development fails to fit the progressive narrative at all. Unlike “most people in this world,” he lacks “a beginning, a middle and an end” and has lived “another kind of life” in which “one is jerked out of one’s stratum and lives crosswise for the rest of the time, and, as it were, in a succession of samples” (9). The nation-soul allegory is deformed, as are the expectations of the bildungsroman, by England’s imminent decline and George’s frustrated ambitions. His fate, like the fate of his social world, is to “grow insensibly monstrous” (386); all he has “achieved” (10) by the end of the narrative he calls “Waste” (381) is to embody a “remarkable social range, an extensive cross-section of the British social organism” (10).

Neither *Tono-Bungay* nor *Point Counter Point* nor “Oxen” quite rejects recapitulation; nor does every novel featured in this study. But, in various ways they suggest a more complex, less neatly analogical connection between one’s life history and national or evolutionary history. This complexity is manifested structurally in modernist bildungsromans, in which chronology, gradualism and causality collide with epiphanic or otherwise abrupt and non-linear narrative dynamics. This complication of the *Bildung* plot is neatly summarized by T. S. Eliot in “The Dry Salvages,” as is the role of biology in determining our ideas of growth and historical change:

> It seems, as one becomes older,  
> That the past has another pattern, and ceases to be a mere sequence—  
> Or even development: the latter a partial fallacy  
> Encouraged by superficial notions of evolution,
Which becomes, in the popular mind, a means of disowning the past.
The moments of happiness—not the sense of well-being,
Fruition, fulfilment, security or affection,
Or even a very good dinner, but the sudden illumination—
We had the experience but missed the meaning,
And approach to the meaning restores the experience
In a different form (26)

These lines reject recapitulation implied in the analogy of “development” and
“evolution”; its headlong progressivism, “a means of disowning the past,” fails to
account for the range of human temporalities and “the meaning” that re-experiencing the
past gives to the present. Stressing “sudden illumination,” Eliot uses epiphany to
dissociate ontogeny (“one grows older”) from phylogeny (“superficial notions of
evolution”) and thus re-invents Bildung from “mere sequence” to a new configuration, “a
different form.”

Contemporary biologists were similarly re-imagining ontogeny’s relation to
phylogeny. If, as H. H. Swinnerton writes in 1938, “those whose memories carry them
back to student days at the end of the nineteenth century will remember how simple and
straightforward the relationship between development and evolution seemed to be,” the
early 1900s featured a complex, dynamic and highly contingent relationship. In Embryos
and Ancestors (1st ed. 1930), Gavin de Beer takes on recapitulation by arguing “that
ontogeny cannot be regarded simply as an extrapolation into the future of a chain of
events which happened in past and previous generations. Each ontogeny is a fresh
creation to which the ancestors contribute only the internal factors by the means of
heredity” (14). De Beer denies the simplistic model of ontogeny as a predetermined
effect of “internal factors” and phylogeny. A corollary of this view is the new significance assigned to individuals in the evolutionary history of a species.

“Ontogeny does not recapitulate Phylogeny: it creates it,” writes Garstang in his 1921 coup de grâce against recapitulation theory (“Theory” 87). By presenting ontogeny as a creative phenomenon rather than a reiteration of past history, Garstang rescues the individual life from its passive role in the evolutionary process. “Ontogeny,” he continues, “is not an animated cinema show of ancestral portraits” (ibid. 100). Not just a sequence of successive images, each displacing its predecessor, ontogeny in its relation to phylogeny invites a more complex technological metaphor: according to the models of Garstang, de Beer and other biologists, ontogeny in its relation to phylogeny begins to look more like the kaleidoscopic, ever-changing and yet recognizably consistent floral patterns Goethe saw when he closed his eyes. Like the narrative and character development of modernist bildungsromans, Goethe’s flowers are both epiphanic and developmental: they are “spontaneous creations” but also “unfold themselves, grow, expand and draw together” (qtd. in Dilthey 247). It is clear that for a genre as deeply implicated with biology as the bildungsroman, the late-nineteenth- and early-twentieth-century debates and discoveries in the life sciences—embryology, histology, reproductive biology, genetics, evolutionary theory—offered new models of character development and narrative structure.

**Development, Biology and Modernist Studies**

---

9 The linear, monocausal basis of recapitulation are discussed by Benoît Dayrat, who sees Goethe and Lamarck, rather than Darwin, as the primary philosophical precursors to Haeckel’s biogenetic law.
Examining modernist treatments of development in light of biology, my dissertation participates in a veritable surge in interest in twentieth-century literature and the life sciences. Biology is on the verge of becoming a hot topic in Modernist Studies. The interest is long overdue.

Perhaps because of its undeniable implication in Social Darwinism, eugenics, and scientific racism and antifeminism, biology has long fostered the critical attitude, otherwise long discarded, that science is anathema to modernism. In *Rooms in the Darwin Hotel* (1973), Tom Gibbons invokes a fundamental opposition between the scientific worldview and the intellectual climate we now call modernist: “the period 1880–1920 was one of full-scale ideological reaction from the scientific materialism, atheism, determinism and pessimism of the mid-nineteenth century” (1). A similar sentiment animates Lee Oser’s recent claim that the high modernists reacted to “a crisis in faith, a social catastrophe” triggered by Darwinism and kindred forces like “industrialism, urbanism, … empire and war” (284). These stark oppositions can be confirmed by citing, say, Lawrence’s anti-science rants or Woolf’s distinction between Edwardian “materialists” and “spiritual” Georgians (*Essays* IV.161). As much recent work has shown, however, neither Lawrence nor Woolf falls simply on one side or the other of the Two Cultures divide. Thankfully, a more nuanced picture of modernism and science has by now largely replaced the contrast that Oser belatedly emphasizes.

Still, much of the work on science and modernism focuses on physics. Linda Dalrymple Henderson’s essay on “Modernism and Science,” for instance, deals

---

10 See, e.g., Greenslade, Seitler, Childs, Edmond, Pick, Bluemel, English, Cuddy and Cuddy and Roche.
exclusively with physics and technology. Physics truly did fascinate the modernists, and, as Richard Sheppard notes, physicists, philosophers, linguists, and artists of the period sound remarkably alike when writing on language, reality, subject-object relations, and alternatives to causality, rationalism and common sense (28–29). “So it was with Darwin, so it is with Einstein,” writes Wyndham Lewis, sarcastically of course, in his review of *Ulysses* (*Time* 104, my emphasis). In Huxley’s *Those Barren Leaves*, it is fittingly the aging Tom Cardan, “almost a twin to *The Origin of Species*” who pits biology against “that disquieting scientific modernism which is now turning the staunchest mathematical physicists into mystics” (32).

Yet “scientific modernism” should also include biology, for it was a very dynamic field in the early twentieth century. The period from 1900 to 1950, roughly synonymous with modernism, is the era of “Classical Genetics,” spanning from the rediscovery of Mendel’s theories (1900) to the beginnings of the molecular revolution (Carlson 1ff). In the interval, biologists discarded recapitulation as a universal process (1898–1920), developed powerful new statistical methods for predicting and explaining evolutionary patterns, and formulated the New Evolutionary Synthesis (1936–47) (Mayr 119, 823). Even as biology coalesced around Neo-Darwinism, the turn of the century was also “the heyday” of “Alternative Theories of Evolution” (Levit *et al.* 72). New work on animal vision by ethologists like J. B. S. Haldane and Jakob von Uexküll, argues Cari Hovanec, suggested alternative modes of perception and, by implication, other modes of subjectivity; meanwhile, as Squier proposes, experimental embryology and genetics were

---
12 The most impressive example being *The Alexandria Quartet*, for which Lawrence Durrell “turned to science and [tried] to complete a four-decker novel whose form is based on the relativity proposition” (7).
challenging “the temporal and spatial boundaries of the individual, the malleability of sex/gender, and the organizing principles of development” (146).

In short, biology raised questions as challenging as physics—questions about the nature of language, the limits of reason, the importance of the body, and the presence, deep within us, of the distant past. “Biology,” writes Aldous Huxley, “is more immediately relevant to human experience” than physics: “The sciences of life have need of the artist’s intuitions and, conversely, the artist has need of all that these sciences can offer him in the way of new materials on which to exercise his creative powers” (Essays VI.131). Many modernists shared Huxley’s view, attending to changes in the life sciences, which crop up in essays and fiction by authors as diverse as Forster, Lawrence, Woolf, Roger Fry, Dorothy Richardson, Wyndham Lewis, Jack London, Djuna Barnes, Vladimir Nabokov and Samuel Beckett.

A few critics have recently proposed that biology might play an important role in modernism. Animal Studies scholarship has brought evolution, particularly human-animal kinship, to the very heart of Modernist Studies. Sarah Wilson offers an illuminating study of evolutionary metaphors in the self-fashioning of ethnic American autobiographers. A fascinating article by Aimee Armande Wilson argues publications by the birth control movement parallel and participate in the modernist narratives that deform “the child-wife-mother trajectory” of the female bildungsroman in order “to imagine new narratives for the lives of women” (441). Christina Alt’s Virginia Woolf and the Study of Nature shares my conclusions about the modernists’ interest with “the new biology” (45), finding “continuity between early twentieth-century developments

---

13 See especially Norris’s Beasts of the Modern Imagination (1984) and Rohman’s Stalking the Subject (2009).
across the arts and sciences” (191). Woolf, Alt asserts, found that “the ways in which life could best represented in fiction coincided with a shift in approaches to the study of nature” (190), as I also find in Forster, Huxley and, to a lesser degree, Joyce. Most notably, Squier’s brief “Embryologies of Modernism,” which in many ways anticipates my study, suggests “that developments in … embryology—concerned as it is with the principle of individual development against a backdrop of species change over time—have a relationship to…. the literary approach to character construction” (145).\(^\text{14}\) Still, the field remains wide open.

Particularly important for Modernist Studies are the many ways in which biology was changing at the turn of the century. If, as John Kucich notes, Victorian science plays a crucial role in shaping “the secular aspects of narrative form—experimental procedures, preoccupation with typologies, the formulation of natural laws, detection, structural correspondence” (123)—then the profound theoretical and methodological changes undergone by biology around the turn of the century must have modified those aspects. Forster is wrong to think that “writing has had too long a start on science, and consequently can only describe new discoveries, can’t absorb them” (Commonplace 46). My reading of his fiction, and that of Joyce, Huxley and Woolf, show otherwise.

Few scientific changes generated more speculation and controversy than the new challenges to a central dogma of nineteenth-century science: the gradual nature of evolution. According to Darwin’s uniformitarian assumptions, evolution is slow, incremental—a view as easily transferable to anti-revolutionary political reform as to the development of literary characters. Based on the discrete nature of Mendelian “character-

\(^{14}\) Like Alt’s, Squier’s focus is thematic and conceptual, while I examine thematic concerns with embryology and development in relation to form and structure.
units” (Punnett 22), Hugo de Vries defied the orthodox view “that species are slowly changed into new types” by arguing that “new species and varieties are produced from existing forms by sudden leaps” (vii).

To some modernists, at least, this alternative tempo and rhythm was aesthetically congenial. In “Classicism and Romanticism” (ca. 1912), Hulme admits that Classicism “was a little shaken at the time of Darwin,” whose gradualism “seems to admit the possibility of future progress”; but, he adds, “at the present day the contrary hypothesis makes headway in the shape of De Vries mutation theory…. enabl[ing] me to keep the classical view with an appearance of scientific backing” (61). Hulme’s comment tells us less about his aesthetics than about a contemporary readiness to justify artistic practice and theory in the life sciences, and in “A Tory Philosophy” (1912), he claims to quote de Vries solely “because other people seem to” (243). Nevertheless, he seems quite earnest in exploiting Vriesian “Mutation theory” for political purposes:¹⁵ Darwinists, he argues, suppose that each step in evolution has come gradually, by an accumulation of favourable small variations. If that were true, then it would be possible to conceive that man himself might … gradually change into something better. But the theory of evolution which is now gradually accepted is that of De Vries…. It supposes that each new species came into existence in one big variation, as a kind of ‘sport’, and, that once constituted, a species remains absolutely constant. There would then be no hope at all of progress for man. (242)

¹⁵ Against the Fabian belief in progressive education, Hulme argues that “variations of intellect follow just the same invariable law as variations in the length of limbs in the animal species. As De Vries puts it, ‘The same variations in the same proportion recur in each generation inside the limits of any particular species’” (230). His view is echoed in Wyndham Lewis’s Tarr: “the ideal of perfect Success is an invention of the same sort of individual as the propagandist of Equal Rights and the Perfectability of the Species” (333).
Though Hulme deals with social and evolutionary change, his attack on the “modern nervousness and horror of the idea of constancy” (244) sheds a fascinating light on at least some modernist notions of Bildung and character development.

The recognition of abrupt evolutionary change coincides with increasingly blatant deviations from the gradualism associated with nineteenth-century realism. This is not to posit a causal link between the two paradigm shifts, though such a link is suggested in Gide’s Les Faux-monnayeurs by Armand, who borrows evolutionary language in his discussion of character: “Gradation; gradation; then, sudden leap… Natura non fecit saltus—what a joke!” (279).16 Characters in modernist fiction often develop abruptly rather than uniformly, spontaneously rather than by plausible cause and effect, drastically rather than moderately. On the other extreme, characters fail entirely to change. Again in Les Faux-monnayeurs, Édouard believes that “irresolution is the secret for not ageing” (324). The Strange Case of Dr Jekyll and Mr Hyde and The Picture of Dorian Gray suggest that for Victorian readers the proper mode for sudden or stalled development was horror, while the very notion of character development implies the gradual, regular growth of Emma or Pip. The same uniformitarianism persists in literary criticism, informing, for example, Percy Lubbock’s praise of Anna Karenina as “one of the most finely toned, shaded and gradated pieces of portraiture in fiction” (236), perfection inhering in its muted, gradual transformations.

When development ceases to be continuous and progressive, it becomes modular and unpredictable in tempo and direction; the protagonist becomes “a form,” as Henry James

---

16 Cf. “Characters who, from beginning to end of a novel or drama, act exactly as one could predict…. I can, in rare cases, admire what is called ‘the spirit of continuity’ [l’esprit de suite]; but more often this aspect is obtained only by a vain entrenchment [un cramonnement vaniteux] and at the expense of the natural” (Gide 324).
defined the novel, “that has had the fortune so little to have been foretold at its cradle” (Literary 100). When growth stalls or maturity is endlessly deferred, the developmental narrative is cyclical or bounded by some unbreachable threshold; so Stephen Dedalus, in Kenner’s view, cannot escape his adolescent aestheticism into artistic maturity (“Cubist” 177). When growth proceeds in fits and starts, by contrast, the narrative breaks up into discrete stages, or modules, which can in extreme cases be rearranged into alternative sequences. In Alison Boulanger’s reading of A Portrait, then, the chapter breaks emphasize the failure of the bildungsroman’s “ideal of a rectilinear trajectory” by suggesting in its stead a “repetitive structure, made up of parallel episodes” (303). In any case, compartmentalization disrupts the gradual and continuous process of Bildung, and it seems significant, then, that the modernist bildungsroman coincides with the divided topographies of development proposed by Freud and others like G. Stanley Hall, who isolated adolescence and old age as distinct stages of human life. When development is thus subdivided, new formations become conceivable: hard boundaries between stages emphasize the possibility that developmental transitions might fail, and may even give the impression that a life-cycle is modular, a collection of parts that might be re-arranged in any number of ways. Consider Woolf’s Orlando: Orlando’s development is extremely slow and seems to decelerate over the centuries; in striking contrast with this gradualism, about two centuries after his birth he falls into a coma (suggesting pupation) and awakens transformed into a woman; and, as if this weren’t strange enough, the metamorphic coma is a relapse—only the first time it brings no change to Orlando whatsoever.

By questioning progressive development, the modernist bildungsroman also questions the genre’s traditional paralleling of individual growth with what Bakhtin calls
“national-historical time” (Speech 25). The traditional bildungsroman charts how its protagonist learns to serve social and national life; individual growth submits to a larger historical and often racial project of national becoming (Kontje, Women 9–10). The parallel between this narrative and the structure of recapitulation theory is not accidental: pre-Darwinian versions of recapitulation played an essential part in Herder’s notion of Bildung as an individual and national process, a notion that inspired left-wing utopian socialists like George Bernard Shaw (Hale 53), as well as the far-right narrative of organic national destiny that culminated in the Holocaust (Gould, Ontogeny 77–78).

Theories of Bildung also played a crucial part in the philosophy of biology, not least in the sciences of embryology and evolutionary theory. Recapitulation, as we have seen, was easily made to serve any number of progressivist historical narratives—whiggish, socialist, fascistic—and also various models of individual growth—psychoanalytic, pedagogic, anthropological and sexological. Thus a uniformitarian model of individual development implies, for historical if not essential reasons, a recapitulatory structure.

This link between individual growth and recapitulation is exemplified by a wealth of contemporary literature, which ranges far beyond the biological sciences. Thus A. Milnes Marshall, though speaking to fellow zoologists, explains recapitulation by means of human “speech, dress, and customs,” which “are as true rudiments, unintelligible but for their past history, as are the ear muscles he possesses but cannot use” (829). Freud, likewise convinced of recapitulation and its wide applicability, inspired Carl Jung’s theory of archetypes, “the manifestations of a deeper layer of the unconscious where the primordial images common to humanity lie sleeping” (65). An excellent discussion of such applications comprises Chapter Five of Gould’s Ontogeny and Phylogeny (1977).
As Gould and others have noted, recapitulation theory also had its impacts on early-twentieth-century literature. It was apparently pervasive enough in fiction to merit lampooning, as in Stella Gibbons’s *Cold Comfort Farm*, which describes a hat that “had lost—in who knows what hintermath of time—the usual attributes of shape, colour, and size, and *those more subtle race-memory associations* which identify hats as hats” (81, my italics). The hat’s ontogeny, as it were, has been stretched so long that its identity—defined by its phylogenetic status—is compromised.

Gibbons makes light of her peers’ tendency to evoke “race-memory” as an active element in characterization, especially in fiction about rustic and otherwise earthy folk. But there were serious reasons why modernists questioned recapitulation theory. Because recapitulation lends itself so well to narratives of progress, any apparent deviation from the recapitulatory pattern might have been coded as regressive, degenerate or bestial. It also helped justify old prejudices. Atavism results from an arrest in development, which means that, if development is incomplete for whatever reason, the organism fails to reach the latest stages of evolution (in humans, according to many contemporary thinkers, possible reasons included being poor, Irish, female, homosexual, dark-skinned, alcoholic, urban, neurotic or artistic). The result is infantilism, degeneration, criminality, perversion and animality. This recapitulatory account of atavism is behind a remarkable amount of early twentieth-century intellectual life, including Cesare Lombroso’s criminal anthropology, Benjamin Kidd’s imperialism and scientific racism, G. Stanley Hall’s pedagogy and Freud’s theory of neurosis (Gould, *Ontogeny* 115–66).

---

17 As Todd Kontje notes, the early theorists of *Bildung* emphasized an essential biological difference between the sexes, one which, “by equating women with nature, … denied women any chance of participating in the process of *Bildung*” (German 7).
Against this trend we find “Oxen of the Sun,” which delights in the atavistic grotesque, in “those swineheaded … or doghaired infants occasionally born. The hypothesis of a plasmic memory … envisaged in such cases an arrest of embryonic development at some stage antecedent to the human” (*Ulysses* 391). Certainly, atavism undermines the progressive *Bildung* narrative. As Dana Seitler notes, “the atavistic body” highlights both the disjunction between past and present and “incarnates the present as a temporal synthesis, for it instantiates the crossing of temporalities and personhoods that should, at least ideologically, remain discrete” (16–17). Progress requires a history, if only as a system of roots and as something to surpass. But as a literal return of the past, atavism is too uncanny to sit easy with a belief in inevitable progress. It makes all too plain the fact that paradoxical state of being modern, advanced or, after Darwin, human.\(^\text{18}\)

As long as recapitulation stood as a universal law, atavism was easily explained and often vilified as a freakish pathology (Fig. 2). In his onto-phylogenetic model of the unconscious, first proposed in 1916, Jung rescues the narrative of progressive development by domesticating phylogeny. His model is recapitulatory: “the contents of the collective unconscious are not only the residues of archaic, specifically human modes of functioning, but also the functions from man’s animal ancestry, whose duration in time was infinitely greater” (98). As such, atavism is a threat to normal development.

---

\(^\text{18}\) See, for example, Bruno Latour, John Gordon (*Physiology*), Cannon Schmitt, and Dana Seitler.
“These residues,” Jung continues, “are extremely liable, when activated, not only to retard the pace of development, but actually force it into regression until the store of energy that activated the unconscious has been used up” (98). His entire approach aims to reverse this potential regression, to channel energy back into forward growth; the misdirected “energy becomes serviceable again by being brought into play through man’s conscious attitude towards the collective unconscious” (98–99).

As recapitulation lost its status as universal law, however, the notion of evolutionary progress grew, if not untenable, less inevitable. Many continued to believe in progressive evolution, including biologists like Julian Huxley. But the basis for their faith had weakened. In the March 25, 1915, issue of *The New Age*, “G. D.” evidently feels the need to counter widespread “talk of evolution from a low stage to a high”: “Much nonsense is spoken, even by some evolutionists, of evolution in terms of linear or moral direction…. No so-called direction (read moral purpose) is discernible” (569). A similar suspicion of evolutionary progress, though not evolution itself, characterizes several figures now
associated with modernism. In “The Soul of Man under Socialism,” Oscar Wilde subverts the equation of child and primitive by proclaiming that, in “the new world,” “the true personality of man…. will be as wonderful as the personality of a child” (22).

Taking the societal view, Edward Carpenter argues that “the line of progress” might be dangerous, that its forward momentum must be checked by a “reversionary process” (Angels 246), “a going back to a previous point, and a branching out from thence” (ibid. 244). Samuel Butler and Nietzsche variously prefer ostensibly primitive instinct to civilized intellect, as do Lawrence, Picasso, Fry, Rousseau and Stravinski, who explicitly level distinctions between ancient and advanced cultures. Writing on Cézanne’s geometric forms, José Ortega y Gasset attacks the recapitulatory logic of cultural progress: “A careless observer might have supposed that, with its evolution exhausted, pictorial art had begun all over again and that we had relapsed back to the point of view of Giotto. Not at all! In the history of art there have always been eccentric movements tending toward the archaic” (115).

As an increasingly shaky scientific framework for narratives of individual, national and historical progress, recapitulation was ripe for subversion by novelists. In a Social Darwinist world that proclaims “Perish each laggard,” Forster exhorts “the courage to become a laggard” (Prince 89). André Gide similarly praises “a brave horticulturalist who, sick of the routine and, one might almost say, for the challenge of it, chose to select instead [of the most robust] the most stunted—and the incomparable flowers he obtained” (148). To embrace unfitness in this way often means re-claiming atavism as a positive individual and societal phenomenon—a re-claiming I call reversion (pace Carpenter’s “reversionary process”) to avoid the negative associations of atavism. In Howards End,
Forster invests much of his novel’s value in the unpromising Leonard Bast, who, “half clodhopper, half board-school prig, … can still throw back to a nobler stock, and breed yeomen” (320, my italics), and who is clearly favoured over Mr Wilcox, who “cares too much about success, too little about the past” (171).

Joyce consistently exhibits an anti-progressive stance on recapitulation. In “The Universal Literary Influence of the Renaissance” (1912), he dismisses the notion that it is only since the Renaissance that humanity “did develop physically and morally to the point of meriting the name of adult” (Padua 19). Though “Oxen of the Sun” seems to reinforce this recapitulatory view, its chaotic coda clearly travesties the progressivist and implicitly imperialist notion of language on “its course straight on like an advancing way, widening and improving” (Joyce, Critical 29). The travesty of recapitulation climaxes in Finnegans Wake’s overdetermined correspondences.

Joyce’s ironic treatment reflects the changing outlook on recapitulation by biologists themselves. Because evolution had been absorbed by fields ranging from anthropology, sociology, psychology, pedagogy to linguistics, the dramatic and often publicized biological discoveries of the day would have forced or enabled new cultural and artistic perspectives. Some thinkers—Freud comes to mind—preserved their theories by refusing to abandon, even after it had been discredited, the recapitulatory relation between ontogeny and phylogeny. Others, including the authors examined in this dissertation, appear to have seen the potential—artistic as well as political—of considering how new theories changed notions of coming-of-age.

Two paradigm shifts in biology seem to have been especially damaging to the master narrative of progressive development, at least in relation to modernist bildungsromans.
First, it was increasingly clear, as de Beer reports, “that the so-called biogenetic law is by no means of universal application” and is, rather, but one possible relation between ontogeny and phylogeny (9). Evolutionary novelty, biologists recognized, is caused not only by “terminal addition” (i.e., the appearance of new traits at the end of ontogeny, pushing existing traits earlier into ontogeny and thus producing recapitulation), but also by the insertion of new traits at any stage of ontogeny, or by relative changes in the maturation rates of sexual and somatic tissues. Recapitulation was not rejected, but having to lose its universal status “orphaned,” as Robert Richards puts it, “Haeckel’s ideological notions of progress” (“Ideology” 104).

The second major change was in genetics. Once Mendel’s theories were rediscovered in 1900, ushering in “a new biological era” (J. Huxley and Haddon 71), it became difficult for biologists to support Lamarckian inheritance, the model most congenial with recapitulation (Gould, Panda 246). Mendelism was disturbing in other ways: it seemed to challenge Darwinian gradualism, it invalidated the notion of genealogical purity, and it destabilized traditional notions of selfhood by foregrounding our piecemeal constitution. Mendelism was nearly unique because it posits an atomistic form of inheritance in which parental genetic contributions do not blend when combined. Nearly all other contemporary theories assumed the blending of parental “forces” or “influences” (Olby 63) or molecules (Mayr 699). In Mendelian inheritance, discrete, independently transmitted particles combine without blending; their effects are sometimes visible, sometimes latent. In the case of my eye-colour, heredity combined (not blended) two separate but complementary molecules (“unit-characters,” now called alleles), one maternal (B for brown), one paternal (b for blue). The combination (Bb) produces the
character (i.e., phenotype; here, eye-colour). In my cells, the combined alleles retain their separate identities ($B$ and $b$), rather than blending into an average or novel form (say, $\bar{b}$). And each of my sex cells gets one allele only, either $B$ or $b$, by random lottery. This is the Law of Segregation. A second law, the Law of Independent Assortment, states that each character segregates independently (more or less) from other characters. An individual with $Bb$ and $Tt$ may therefore give four possible combinations: $TB$, $Tb$, $tB$ or $tb$. Add more characters and the possibilities proliferate. The unsettling implication is that individuals are but temporary ports-of-call for thousands of independent alleles.\(^{19}\)

The genetic and embryological paradigm shifts are, of course, related: “the relation between ontogeny and phylogeny,” writes de Beer, “is to be looked for and found in heredity” (6). In Mendelism’s mosaic model of heredity, change occurs largely through shuffling the arrangement and combination of highly conserved genes, and this model is inherently problematic for recapitulation theory, which assumes “that adaptations could only be tacked onto the ends of ontogenies” (LaBarbera ix). So damaging were the new genetics to recapitulation that Ernest MacBride, a famously intransigent Lamarckian and anti-Mendelian, denies as late as 1930 the possibility of “gene-mutation theory” because it “is totally irreconcilable with the recapitulation theory” (“Embryology” 884).

Modernist bildungsromans frequently associated their models of disrupted growth with physiology or heredity. In Gertrude Atherton’s Black Oxen (1923), fifty-eight year old Mary Zattiany is rejuvenated by ovarian irradiation and successfully courts a much younger man—what a blow to the conventions of the romance! At the end of Antic Hay

\(^{19}\) If this anti-humanist corollary of Mendelism seems less than salutary, consider its affinity with a more widely recognized paradigm shift: “a text is not a line of words releasing a single ‘theological’ meaning … but a multi-dimensional space in which a variety of writings, none of them original, blend and clash. The text is a tissue of quotations drawn from innumerable centres of culture” (Barthes 1468).
(1923), set in a physiology lab, we find “little black axolotls” and “a fifteen-year-old monkey, rejuvenated by the Steinach process, … gnashing his teeth with thwarted passion” (253). Both animals are object lessons in disrupted development: axolotls, for retaining juvenile features into sexual maturity, and the monkey, for remaining artificially youthful thanks to vasectomy (“Rejuvenation” 137–38). Each in its own way, Huxley’s oddly youthful animals reflect the listless, immature social world of Antic Hay and provide, in miniature, the fate of characters in many modernist bildungsromans.

The link between ontogeny and phylogeny affects character development as early as Alice’s Adventures in Wonderland (1865). When she meets the caterpillar, Alice compensates for her inability to grow into an adult by trying to educate the larva about its own developmental trajectory: “you have to turn into a chrysalis—you will someday, you know—and then after that into a butterfly.” But her bravado evaporates when the caterpillar merely repeats his initial question: “‘Who are you?’ Which brought them back again to the beginning of the conversation” (L. Carroll 41). Alice simply doesn’t know who she is. And like the protagonist of several modernist bildungsromans, her lack of self-knowledge is correlated with an unconventional mode of development: instead of growing up, Alice simply grows. Sometimes she shrinks.

Alice is disconcerted not only because it makes her question who she is at any given time; it also seems to multiply her identities at one time: “I know who I was when I got up this morning but I think I must have been changed several times since then” (41). At one moment she is so large she considers posting her shoes to her own feet as if they were parts of another person or, even, other organisms in themselves. Carroll thus anticipates modernist fiction’s questioning of being and identity, issues foregrounded in
the modernist bildungsroman. The caterpillar’s question—“who are you?”—also disturbs Alice because in posing it he has turned the conversation “back to the beginning” instead of carrying out a productive exchange. Its developmental structure has lost the linear and progressive trajectory of conventional communication and become cyclical and apparently pointless.

Carroll’s caterpillar, uninterested in the next stages of butterfly development, is almost certainly based on a passage from The Origin of Species, where Darwin describes the larva of the apple-leaf miner as an illustration of how habitual repetition can eventually become fixed and, eventually, heritable. The caterpillar, writes Darwin,

makes a very complicated hammock; for if he took a caterpillar which had completed its hammock up to, say, the sixth stage of construction, and put it into a hammock completed up only to the third stage, the caterpillar simply re-performed the fourth, fifth, and sixth stages of construction. If, however, a caterpillar were taken out of a hammock made up, for instance, to the third stage, and were put into one finished up to the sixth stage, so that much of its work was already done for it, far from feeling the benefit of this, it was much embarrassed, and, in order to complete its hammock, seemed forced to start from the third stage, where it had left off, and thus tried to complete the already finished work. (Origin 208)

Darwin’s embarrassed caterpillar beautifully incarnates the doubts underlying Victorian notions of progress, and offers itself to the modernist age of doubt—not least because repetition and interruption characterize so many modernist narratives. It stands as a sort of mascot for my own project on the modernist bildungsroman; repeatedly prevented from fulfilling its ontogenetic telos, it will eventually transmit its foibles to future
generations. Its tendency to revert to earlier stages of development anticipates a feature that Susan Gohlman finds characteristic of the twentieth-century bildungsroman: the need for protagonists to interrupt their own development by “reject[ing] everything they had learned and painstakingly creat[ing] a new or revised set of values” (ix). This pattern is evident in A Portrait of the Artist, which shows Stephen alternately forming himself as a sensualist, a priest and finally an artist.

Fitting, then, that we find Darwin’s caterpillar in Samuel Butler’s The Way of All Flesh, a late-Victorian bildungsroman much appreciated by modernists. Recording the trials of Ernest Pontifex, the narrator Mr Overton reveals that Ernest read Mr Darwin’s books as fast as they came out and adopted evolution as an article of faith. “It seems to me,” he said once, “that I am like one of those caterpillars which, if they have been interrupted in making their hammock, must begin again from the beginning….” I do not know whether the analogy holds good or not, but I am sure Ernest’s instinct was right in telling him that after a heavy fall he had better begin life again at a very low stage. (342)

Unsure of his place in the world, except insofar as his place is not that of his father, Ernest abandons many projects before turning to authorship. His writing rather replicates his caterpillar-like cycles, however: in his book, he repeatedly defers closure by adopting, with every new chapter, a new persona and opinion, a new beginning.

In a pleasing accident of historical symmetry, Darwin’s caterpillar reappears several times at late end of modernism, in the works of another Samuel B. 20 In “Echo’s Bones” (1934), a caterpillar “working away at his hammock… [is] far from feeling any benefit”

---

20 This symmetry balances the pattern established by the two Charles Ds (Darwin and Dodgson).
when he is interrupted by the helpful offer of “labour-saving devices” (qtd. in Ackerley and Gondarski 125–26); in Murphy (1939), a novel dominated by routine and mindless movement, Miss Counihan interrupts herself “in preference to being interrupted,” a pause that moves the witty Wylie to comment, “She quite forgets how it goes on … She will have to go right back to the beginning, like Darwin’s caterpillar” (Murphy 122). Beckett was not done with the caterpillar, giving it another cameo in Watt (1953):

Go on from where you left off, said Mr Magershon, not from where you began. Or are you like Darwin’s caterpillar? Darwin’s what? said Mr. de Baker. Darwin’s caterpillar? said Mr Mageshon. What was the matter with him? said Mr MacStern. The matter with him was this, said Mr Magershon, that when he was distracted in the building of his hammock—. Are we here to discuss caterpillars? (194)

The appearance of Darwin’s caterpillar in Carroll’s, Butler’s and Beckett’s writings reveals with especial clarity how unusual relations between ontogeny and phylogeny can affect developmental narratives. For Butler, the caterpillar exemplifies the role of habitual action that would form the basis for his anti-Darwinian theory of inheritance, first published in Life and Habit (1872) and later championed by Bernard Shaw. For Beckett, the caterpillar provides not only a basis for the psychology of his characters but for the very movement of his narratives; “caterpillar logic,” Kathryn Chiong asserts, “provides the model for Samuel Beckett’s production, where series upon series go on from where they begin, where ‘going on’ finally takes priority over all ends” (63). We can thus see Darwin’s caterpillar lying latent in Waiting for Godot, with its almost identical two acts and Vladimir’s proposal to “start all over again perhaps” (41).
Without claiming a direct relation to Darwin, I find that caterpillar logic speaks to modernist narrative more generally. Beginning and beginning is a recurring thematic concern and structural device in modernist novels. In *Point Counter Point*, Huxley baldly uses such repetition to mock pretensions of self-help; Miss Fulkes reads *The Wealth of Nations* “to improve her mind” and social status, but the project proves too difficult: 21

Miss Fulkes read the sentence through; but before she had come to the end of it, she had forgotten what the beginning was about. She began again; … “for want of opportunity to exchange all that surplus … (I could take the sleeves out of my brown dress, she was thinking; because it’s only under the arms that it’s begun to go, and wear it for the skirt only with a jumper over it) … over and above his own consumption for such part … (an orange jumper perhaps).” She tried a third time, reading the words out aloud. (192)

The repeated beginnings, and the parenthetical digressions, illustrate almost as well as Ernest Pontifex how damaging the principle of Darwin’s caterpillar is to the *Bildung* plot. Similar dynamics account for the series of false starts that makes *Howards End* so strangely modernist despite its evident Victorian legacy, or in Stein’s *The Making of Americans*, whose characters and narrator are always “beginning again and again and again” (362). In Edwin Muir’s *The Marionette* (1927), a largely forgotten bildungsroman, the “feeble-minded” protagonist (5) Hans finds a way to grow up in his imaginary world of marionettes, only to discover that his fantasies always leave everything “unchanged” and that “he had to begin perpetually again” (79). *Ulysses* begins twice at eight in the

---

21 Huxley coverts a dig at the nation-soul allegory into this passage, playing on the analogy of “industry” as a human faculty or activity that leads, according to popular wisdom, to self-improvement, and “Industry” as an institution which drives the wealth of nations; as Raymond Williams notes, Adam Smith’s book is notable for having coined “Industry” in this second sense (xiii).
morning—in “Telemachus” and again in “Calypso.” By foregrounding how hard it is to begin a novel, and by testing several beginnings, Flann O’Brien’s *At Swim-Two-Birds* “operates,” as Gregory Dobbins puts it, not according to “the teleology of linear progress” (92) but in “‘Irish time,’ an understanding of temporality as recalcitrant in the face of modernization identified with the state” (87). Gillian Beer argues that evolutionary theory authorized a way of reading “the primeval and prehistoric” as perpetually recurring forces, undermining causality as the dominant mechanism of narrative and the search for origins as its dominant motive. Instead Woolf consistently uses the motif of waves to embody an alternative pattern, one of “re-formation, not transformation,” which allows for movement without compromising “the survival of prehistory” (*Woolf* 17).

The above is a small sample of a widespread tendency. For obvious reasons, though, the act of beginning and beginning without ever following through is especially problematic in narratives of development. As Levenson notes, “the conventions of the *Bildungsroman* cannot be assimilated to the pattern of serial repetition” (“Stephen” 1021). Because Darwin’s account of stalled maturation in the “much embarrassed” caterpillar subverts those conventions by foregrounding odd relations between ontogeny and phylogeny, it might be said to be a modernist *Bildungsroman* in miniature, undermining the very idea of normal development.

***

In “Life Histories,” I examine how four modernist bildungsromans obstruct or derail the genre’s historical and philosophical complicity with recapitulation theory. Among novelistic genres, the traditional bildungsroman boasts an unusually simple temporal structure, in which story and discourse run parallel. Even if its history weren’t already
linked with recapitulation theory (and it was), this structure would go a long way towards confirming “the beliefs in causation and chronology that became associated with the term ‘recapitulation’ in post-Darwinian days” (Mayr 472). A bildungsroman that decouples discourse from story can therefore be read as a challenge to the genre’s inherited recapitulatory logic and organicist framework.

Recapitulation implies two timeliness (one individual, the other historical), as does the most traditional bildungsroman, which run in the same direction. In modernist bildungsromans, this temporal parallelism is broken in various ways. Linking the four novels examined here is a formal and thematic attack on the genre’s linear plot and its resulting amenability to progressivism or teleology. By engaging with new biological theories sceptical of recapitulation’s simplistic futurism, these novels attack notions of evolution as a march ever forward. Their temporal visions are therefore multidirectional, a feature especially clear in their use of repetition, rhythm, anachrony and timelessness.

Such anti-recapitulatory dynamics also help counter another unsettling implication of evolution and development as unidirectional, irreversible processes: the possibility that progress is ultimately, fundamentally entropic. In 1893, Louis Dollo called evolution “the genealogical manifestation of the second law of thermodynamics,” and what became known as Dollo’s Law states that evolution is entropic because it is historical and consequently irreversible (Gould, *Eight* 91–92). But, as T. A. Goudge clarifies, “Dollo’s Law is broadly sound, provided it is interpreted statistically,” which is to say reversals may occur but are very unlikely. The mosaic view that came to characterize early twentieth-century organismal biology and genetics, however, made evolutionary reversibility less unthinkable; “since organs and characters are genetically conditioned,”
writes Goudge, “and since any mutation may be reversed, it is not impossible for an organ or character which has disappeared to arise again” (170). This possibility, most conceivable in Mendelian thinking, is one that Forster in particular embraces.

It is significant, in this context, that contemporary theories of evolution highlighted the possibility and even desirability of such reversals. For Henri Bergson evolution is the increasing dissipation of *élan vital* as it is channelled into divergent lineages, only some of which, notably humans, are progressive. Despite Bergson’s faith in human progress, however, he sees harmony not ahead as in Spencer’s evolutionism “but behind”; the implication is that it is those lineages capable of “a return backwards” that might, by reversion the entropic, genealogical stream, recapture some of the primitive energy (*L’Évolution* 105). The four chapters of this study, then, have some kind of time-reversal as a common philosophical and narrative-structural ground.

In Chapter One, I read Joyce’s *Portrait* as a bildungsroman whose ontogenetic plot is repeatedly upset by upwellings of a hidden phylogenetic past. Foregrounding Stephen’s unusual receptiveness to carnal and sexual words, I link his epiphanies to his unwilled ability to remember or imagine distant pasts, personal and ancestral, human and “infrahuman” (*Portrait* 167). Rather than the fruit of cumulative experience and self-cultivation, artistic insight comes unbidden and spontaneously from the deep past, without necessarily bringing him any closer to artistic success and maturity. I begin with *A Portrait* because it is, in its structure and biological interests alike, the most Victorian of the bildungsromans I discuss. Though Joyce’s recapitulatory logic is opposed to the ideologies associated with recapitulation theory, *Portrait*’s model of development and evolution is more or less consistent with the notion that ontogeny replays phylogeny.
Things begin to look rather different in Chapter Two, which reads *Howards End* (1910) through the genetic theories of Gregor Mendel, rediscovered in 1900. The novel’s primary biological challenge for the *Bildung* plot is therefore reproduction. For though producing heirs is the duty of a good citizen, reproduction also undermines the upward arc of the *Bildung* plot by cancelling the progress accrued by the parent. As Richard Dawkins puts it, “no matter how much knowledge and wisdom you acquire during your life, not one jot will be passed on to your children by genetic means. Each new generation starts from scratch” (*Selfish* 23). Reproduction’s challenge to *Bildung* seems to account for the profound differences in structure and ideology between the bildungsroman, with its progressive, developmental narrative, and the family saga, with a iterative genealogical narrative that tends to chart declining family fortunes (*Ru* 159).

Perhaps most intriguing about these contradictory structures is the fact that the two genres often overlap: most family sagas focus mostly on the development of one member from one generation (e.g., Ernest in *The Way of All Flesh*), while a smaller but notable number of bildungsromans spill over into either the generation either preceding or following the protagonist’s (e.g., *Sons and Lovers, The Longest Journey*).

*Howards End* isn’t obviously a bildungsroman, which I defined above as a novel charting the growth of a central character from infancy or childhood to maturity. But by emphasizing reproduction it nevertheless produces a *Bildung* plot, in which Margaret’s and Leonard’s truncated ontogenetic plots are completed in the phylogenetic future: the novel omits their childhood, but this missing stage is supplied in their stead by Leonard’s son by Margaret’s sister Helen. Adopting the shift in focus from individual to lineage, a

---

22 As Tobias Boes argues, the tension between the *Bildung* and intergenerational plots is a structural element of the bildungsroman even in *Wilhelm Meister’s Apprenticeship* (*Formative* 66).
bildungsroman can, without compromising its developmental structure, follow the genes—first in the mature individual, then in the infant kin.23

In *Howards End*, the narrative straddles the line between bildungsroman and family saga, as if to highlight the disconnection between *Bildung* and intergenerational improvement. This illustrates the dissociation of ontogenetic and phylogenetic narratives, which I have identified as a defining feature of the modernist bildungsroman; while ontogenetic progress for both Leonard and Margaret lies ahead, beyond the bounds of their own life, the hereditary mechanism that enables that progress is reversion to a past phylogenetic state. Ontogeny and phylogeny pull the plot in different ways, which may account for the novel’s notoriously incoherent plot. Through principles of Mendelian inheritance, Forster naturalizes and even celebrates atavism (reversion to ancestral type), which from the perspective of recapitulation theory only made sense as a freak or pathology. Mendelism gives the lie to evolution’s headlong forward movement, for the simple reason that “no stock is pure, and that it may at any moment throw up forms which are unexpected, and which it inherits from the past” (*Two Cheers* 19). Accordingly, I read *Howards End* as a bildungsroman whose line of development is fractured by procreation and reconstituted by reversion. Crucially, this genealogical framework is supplemented by nonbiological networks, which I call *epigenealogies*.

Chapters One and Two complicate the relation between ontogeny and phylogeny by re-evaluating, each in its own way, the value of atavism. In Chapter Three, I link the highly anachronous narrative of Aldous Huxley’s *Eyeless in Gaza* (1936) to contemporary embryological, physiological and genetic research. One of the more

---

23 Gregory Castle similarly finds cross-generational *Bildung* in *Mrs Dalloway* (29, 193, 231ff).
conserved generic features of the bildungsroman is a chronological narrative; even novels as subversive of the genre as Jacob’s Room, Orlando and Henry Green’s Blindness retain a more or less parallel story and discourse. But Eyeless in Gaza forcefully disappoints this generic expectation, as we see in the shock and incomprehension of its initial reviewers and even more recent critics. The anachronous bildungsroman is concerned with true maturity—a rare state, as Huxley often argues, in a modern world characterized by overspecialization and infantilism. What is required, Huxley argues, is not gradual improvement but abrupt, radical self-transformation akin to metamorphosis; this is the argument subtending Eyeless in Gaza’s experiments. In Chapter Three, I read the novel in light of contemporary studies on neoteny, the retention of juvenile or foetal traits into sexually maturity. Neoteny, as biologists were finding, results from heterochrony, a change in timing in sexual relative to somatic development. Heterochrony dealt a severe blow to recapitulation’s privileged status as universal law, for it explained both recapitulation and neoteny as different expressions of the same general phenomenon. If there is any law, Dawkins suggests, it is that heterochrony “must underlie many, if not all, evolutionary changes in anatomical shape” (Ancestor 325).

Recapitulation is, then, merely the result of fast somatic development relative to sexual development: over evolutionary time, what were adult stages are pushed earlier and earlier into ontogeny, often into embryogenesis; reverse this dynamic—slow down somatic development—and the result is neoteny (Fig. 3), the retention of juvenile features in adulthood that is common to dogs, axolotls and humans. By using neoteny as a structural principle of Eyeless in Gaza, and by mimicking neoteny’s underlying mechanism (heterochrony) through narrative anachrony, Huxley upends the
developmental narrative of the bildungsroman. Not only does heterochrony suggest new developmental possibilities, it also promises new kinds of relation with other people.

More generally, heterochrony provides a clear heuristic analogy for understanding the formal mechanisms of the modernist bildungsroman. In the narratives of what Esty calls “unseasonable youth” (*passim*), development in “biological time” is decoupled from development in “biographical,” social, psychic or cultural time (I use Bakhtin terms; *Speech* 17, 11). The analogy with heterochrony helps visualize how two chronotopes can coexist in a single developing character—though the coexistence often manifests itself as instability or incoherence. We better grasp Stephen’s development, and the vexed generic project of Joyce’s *Portrait*, when we think of him as the embodiment of two conflicting chronotopes: the developmental and the epiphanic, the latter allowing us to read deep time (both biological and cultural) in his very body and mind. Indeed, this narrative dynamic is common to all the novels I read in this study.

![Figure 3](image.png)

**Figure 3.** Cartoon comparing recapitulation with paedogenesis. Recapitulation involves terminal addition, where previous stages are pushed earlier and earlier in ontogeny (left arrow); paedogenesis proceeds by stretching earlier stages, later stages being pushed further and further until formerly adult stages disappear beyond the organism’s natural life span. Recapitulation and paedogenesis have very different results, but they derive from the same process: heterochrony.

Embodying two more or less overlapping chronotopes, one developmental (ontogenetic) and the other epiphanic (phylogenetic), Stephen illustrates the poetics of
the modernist bildungsroman. The former is more evident; here the protagonist’s past leaves residues in the present, ostensibly more developed self; this ontogenetic chronotope is obvious in Freud’s psychoanalysis, which traces adult psychic symptoms back to childhood and even foetal trauma. But the ontogenetic is involved with another, phylogenetic chronotope, for, as Darwin puts it, “Man still bears in his bodily frame the indelible stamp of his lowly origin” (Descent II.405). The innovations and subversions of modernist bildungsromans are palpable because the texts don’t attempt to conceal or resolve but rather emphasize the tensions between the two biological chronotopes.

The tensions are crucial also in Woolf’s Orlando (1928), another bildungsroman highlighting the decoupling of ontogeny and phylogeny. Though the novel foregrounds similar onto-phylogenetic relations as the bildungsromans covered in Chapters One to Three, I am interested in Orlando for a different but related reason. In Chapter Four, then, I read Woolf’s novel as a modernist bildungsroman and as a metafiction concerned with its own narrative dynamics. Orlando tells us less than Portrait, Howards End or Eyeless in Gaza about specific biological theories, but by theorizing its own participation in modernist organicist theories of the novel, it helps us see how and why the modernist bildungsroman offers such a hospitable narrative template for biologically-influenced innovation. The tendencies outlined in Chapter Four suggest that even novels as biologically sophisticated as Eyeless in Gaza illustrate a more general concern in modernist fiction and its interrelations with other aspects of cultural and intellectual life.

24 Woolf wrote several bildungsromans, but I focus on Orlando because it so obtrusively advertises the relationship between ontogenetic and phylogenetic plots, and also because its engagements with biology have enjoyed less criticism than the other novels. Gillian Beer offers an excellent reading of prehistory in The Voyage Out, The Waves and Between the Acts, but mentions Orlando only in passing (Woolf 7, 26).
Overall, my dissertation explores how biology challenged received ideas about the body, selfhood, heredity, sexuality and human history, and how these challenges, in turn, helped modernists update and complicate traditional models of character and plot and their relations to society and history. It shows that biology plays a greater role in modernist literature, and especially in its formal innovations, than previously thought, and thus it offers one of the first thoroughgoing examination of modernism and the life sciences, a connection which is only beginning to elicit the critical attention it deserves.

One of the obstacles to a study of evolutionary biology in the early 1900s is the perennial fascination with Darwin himself and his writings. In *Darwin and the Novelists*, George Levine claims that, after Conrad, Darwinism in fiction “is so diffused and various, so much part of the Freudian mythology, of the deconstructive turn, of the largest movements of mind in the twentieth century[,] that efforts to trace it further become futile” (272). Once Darwin was thoroughly absorbed into the skin of our culture, Levine implies, evolution’s power to shock, exhilarate and inspire was sapped. But evolutionary theory does not end with Darwin; some of the most dramatic discoveries and controversies in the history of evolutionary biology occurred between Darwin’s death (1882) and the description of the DNA double helix (1953). If they were interested in biology, modernists would have encountered developmental models once unimaginable, models free from the “mental strait-jacket” of recapitulation (de Beer 141).

---

25 In *Darwin the Writer*, Levine suggests that the Darwinian imagination helps explain “the ‘inward turn’” of modernism (122); Darwin’s theory required “a modernist shift in point of view … that challenges what seemed like common sense” (123). But this intriguing connection between Darwin and modernism—also proposed in different form by Krasner—doesn’t contradict Levine’s statement about the futility of seeking Darwinian influences after Conrad. In her essay on Woolf and prehistory, by contrast, Gillian Beer argues that Darwin posed “particular difficulties” for Woolf and thus moved her to create “new forms” (*Woolf* 19).
Levine has argued that Darwinism’s gradualism was so engrained in nineteenth-century thought that it “helped determine the way novels were written,” naturalizing “continuity and connection” as the default mode of narrative progression (“Novel” 224). But as Darwin’s caterpillar and the novels examined in this dissertation suggest, evolutionary theory bolstered not only gradual and cumulative development, but also “the incoherence,” the “deep irrationality” and the “series of disruptions” (ibid. 227) that challenge received ideas of how we grow up. In other words, as Levine observes, Victorian fiction adopted but a fraction of what Darwinism offered to narrative; in contrast to the “uniformitarian and scrupulously sequential” Darwinian aspect of realism (Darwin 263), he proposes another Darwin “whose imagination could not be contained in conventional form…, a Darwin more disruptive, perhaps, than even the greatest of literary followers can suggest, a Darwin who, if fully absorbed by his contemporary novelists, might well have led to other kinds of narratives” (22).

I am proposing that one of Levine’s hypothetical “other kinds of narratives” exists, in fact, in the modernist bildungsroman. If nineteenth-century English bildungsromans became, as Moretti claims, increasingly concerned with individual development confronted by the problematic twin goals of self-realization and social integration (Way 118), the genre would undergo a radical change when biology, psychology, anthropology and even philology joined forces to insist that an individual is never quite an individual but, rather, a being embedded in a complex and not always noble evolutionary past. My dissertation therefore joins a growing number of excellent studies concerned with the modernist bildungsroman and modernist critiques of developmental thinking. By insisting that biology plays a role in these critiques and the formal innovations through
which they are enacted, I hope to show just how profoundly modernism engages with a science it is often thought to reject as regressive and materialist.

Three broad conclusions emerge from my study, each contributing to recent shifts in critical thinking about modernism, as well as to reassessments of the relations between science and culture. First, modernist ethics and politics, though often seen in opposition to scientific thinking, are at least sometimes profoundly engaged with the life sciences. Examining this engagement is therefore crucial to a better historical understanding of modernism. Second, focussing on biology helps confront the persistent charge that modernist literature is ahistoricist, quietist and individualistic, for the biological relation between ontogeny and phylogeny inextricably links the issues of personal and societal change, growth and progress. Third, narrative strategies associated with modernism, like anti-chronology, at least sometimes reflect biological theories that subvert notions of hereditary aristocracy, developmental historicism and universal progress.

The modernist bildungsroman does not reject development; it offers a more diverse range of desirable or acceptable developmental scenarios. As Jules de Gaultier writes in 1903, in language redolent of heterochrony, and suggestive of the bildungsroman’s inherent chronotopic tension, “it seems that some of the parts that make up every living thing—slower to modify themselves, repeating themselves as other changes animate the remainder—help to hold together the more ephemeral, ever-flowing elements with which they successively form relations” (16). This is not to say that new biology freed developmental narratives from their sinister appropriations—far from it. Scientific racism found ways to appropriate the findings that had rendered its premises untenable; the genetic description of sex determination challenged but did not dissolve patriarchal
culture; and the demise of recapitulation theory did nothing to curb the various pursuits—ranging from psychoanalysis through neo-imperialism to genocide—that had once found justification in the biogenetic law.

It did, however, help break some very old habits of mind. Scholars from Dawkins (Unweaving 178) to Gillian Beer (Darwin 1) argue that scientific theories are rarely common-sense when they are new, their novelty resulting from their ill-fit with the prevailing masterplots. Rejecting the biogenetic law was nowhere close, in terms of cultural impact, to the blows delivered by Copernicus, Darwin or Einstein. Yet it represented a definite break from a recapitulatory tradition as old as Western culture. This tradition coalesced into a veritable grand narrative in late eighteenth-century Weimar, homeland of the bildungsroman, and became largely through Haeckel’s efforts virtually unassailable. When biology displaced recapitulation to accommodate new findings in genetics, embryology and evolutionary theory, the range of possible developmental narratives was not only updated but greatly enlarged. The linear progress associated with recapitulation turned out to be just one among many kinds of development, one among others previously seen as pathological arrests or reversals: atavism, arrested development, neoteny and sex-change. By engaging new ways of seeing the formation of individuals and its relation to evolutionary history, modernist experiments with the bildungsroman expand the possible configurations of the Bildung plot, making the genre more receptive to heterodox ways of growing up and to new contexts, new politics and new kinds of life histories.
CHAPTER ONE

EXPERIENCE FOR THE MILLIONTH TIME: WORDS, RECAPITULATION AND THE STRUCTURE OF A PORTRAIT OF THE ARTIST AS A YOUNG MAN

When we come to the phenomena of artistic conception, artistic gestation and artistic reproduction I require a new terminology and a new personal experience.

—Stephen Dedalus in A Portrait of the Artist (209)

Closer inspection of the bordereau would reveal a multiplicity of personalities inflicted on the documents or document…. In fact, under the closed eyes of the inspectors the traits featuring the chiaroscuro coalesce, their contrarieties eliminated, in one stable somebody similarly as by the providential warring of heartshaker with housebreaker and of dramdrinker against freethinker our social something bowls along bumpily, experiencing a jolting series of prearranged disappointments, down the long lane of (it’s as semper as oxhousehumper!) generations, more generations and still more generations.

—Finnegans Wake (107)

O, foetal sleep! Ah, fatal slip!

—Finnegans Wake (563)

We have seen that “Oxen of the Sun” is, with its subversion of recapitulation theory, paradigmatic of the modernist bildungsroman. In the same way the episode sheds new light on Joyce’s other writings, particularly those concerned with development. “Oxen,” indeed, shows him warming to a theme that occupied him as much as ten years before Ulysses. His essay on “The Universal Literary Influence of the Renaissance” (1912), for example, opens with this playful thrust:

The theory of evolution, in the light of which our society basks, teaches us that when we were little we were not yet grown up. Hence, if we consider the European Renaissance as a dividing line, we must come to the conclusion that humanity up to that epoch possessed only the soul and body of a youth, and only after that epoch did it develop physically and morally to the point of meriting the name of adult.

(Padua 19)

The tautology, “when we were little we were not yet grown up,” is evidently sarcastic, but the exact target of the irony is less obvious. It has something to do with “evolution,”
but Joyce seems to give us little more to work with; as a biological reference it seems superficial and facile. But his “we” hints otherwise; conflating individual children who became adults with the human species that grew more civilized over historical time, it points to recapitulation.

As the essay continues, Joyce clarifies his view of the theory that ontogeny recapitulates phylogeny: he finds it “not very convincing” and would “like to attack it with drawn sword” (Padua 19). Attack it he does. Throughout his novels, most famously in “Oxen,” he mocks the analogy of history and individual development, even as he exploits its possibilities. Only his essay on “The Study of Languages” (1899/1900) takes recapitulation seriously with its orthodox picture of language evolution and national destiny. In this early essay, Joyce notes that “in the history of words there is much that indicates the history of men” and argues that literary masterpieces are “landmarks in the transition of a language, keeping it inviolate, directing its course straight on like an advancing way, widening and improving as it advances but staying always on the high road” (Critical 28–29). Joyce’s enthusiastic use of recapitulatory logic helpfully exposes the theory’s attendant progressivism and imperialism, but it should hardly be held against him—after all, these are the words of a seventeen-year-old writing for a schoolmaster. The same logic is unrelentingly subverted in “The Renaissance” essay, “Oxen” and, of course, Finnegans Wake.

But nowhere is the subversion more urgent than in the bildungsroman Joyce was writing at the time of the “Renaissance” essay. His scorn of “the dividing line” between child and adult, or medieval and modern, informs the ambiguous ending of A Portrait of

26 In any case, Weldon Thornton overreaches when he concludes it proves “Joyce’s disbelief in the applicability of evolution to the development of Western culture” (“Voices” 239n38).
the Artist as a Young Man, which casts Stephen Dedalus as either “a lad who is going to
tfall, not a chrysalis from which the author himself is going to wing forth” (Kenner,
“Cubist” 177), or, in a diametrically opposite conclusion, as a budding artist undergoing
a “metamorphosis” into artistic maturity (McBride 21). And because Stephen’s growth is
so tightly coupled to Portrait’s structure, his fraught relationship with history adds a
phylogenetic dimension to the bildungsroman’s more evidently ontogenetic plot. The
existence of this dimension should not be surprising: as I argue in the Introduction, it is
practically implied in the bildungsroman’s plot. Thus the genre enacts hegemonic models
of historical and national emergence as well as a normative model of individual
development.

Stephen’s growth, however, doesn’t fit the normative model. When Joyce brings
phylogeny to bear on ontogeny, recapitulation’s neat parallels break down; phylogeny
and history are not simple templates for ontogeny and Bildung. Nor is phylogeny safely
relegated to the past: it is very much active in ontogeny, upsetting Stephen’s growth
towards his “destiny” (Portrait 171). Joyce uses recapitulatory logic to deflate Stephen’s
individualistic and artistic pretensions; his childhood, his cultural heritage and his body’s
animality all continue to reappear and frustrate his attempts to transcend them. Yet, by
disrupting Stephen’s growth towards self-realization, the novel also calls
recapitulation—or at least its popular and implicit ideological associations—into
question. The structure of A Portrait is onto-phylogenetic rather than specifically
recapitulatory, for though it emerges from the interaction of individual growth and
historical change, its implications challenge rather than bolster the hegemonic, linear and
progressivist assumptions of recapitulation theory.
Joyce did find recapitulation useful for representing relations between individuals and nation. In “Ireland, Island of Saints and Sages” (1907), he claims that “nations have their ego, just like individuals” (*Critical* 154), anticipating Stephen’s vow “to forge in the smithy of my soul the uncreated conscience of my race” (*Portrait* 253). But he almost always uses it ironically. Recapitulation is grotesquely parodied in “Oxen of the Sun,” which appropriates developmental and historical “linearity” only to undercut it; as Mary King argues, its seemingly linear structure is actually “a multilayered contrapuntal score … in which a disrupted pseudolinear mimesis of the movement of English prose and its validating texts is a simulacrum for the development of a male fetus” (350).

Where this development should, according to recapitulation theory, lead the individual through increasingly perfect forms, “Oxen” yields “abortions” (*Ulysses* 372), “monstrous births,” “swineheaded … or doghared infants” and other “cases of arrest of embryonic development at some stage antecedent to the human” (*ibid.* 391).

The technique of “Oxen,” which Joyce dubbed “embryonic development” (qtd. in Gifford, *Annotations* 408n1), is also central to the method and philosophy of *Finnegans Wake*, as Hugh Kenner argues (“Perspective” 365). But its closest counterpart is *Portrait*. Anthony Burgess explains the connection clearly: “In the ‘Oxen of the Sun’ … a history of English Literature—which is a good enough record of the spiritual history of a nation—is used to symbolise embryonic growth; in *A Portrait*, embryonic growth is used to symbolise the spiritual history of a young poet” (44). Both “Oxen” and *Portrait* couple individual life story with national history, and both are structured by changing prose styles; both use gestation as a “principle of order” (R. Ellmann *Joyce* 307).
These parallels suggest that the gestational structure of *A Portrait* might also conceal the evolutionary analogue that “Oxen” publicizes. If “Stephen … is the embryo” in *Portrait* as in “Oxen” (Joyce, qtd. in Budgen 216), and if both texts use style to mimic embryogeny, then *Portrait* might also resemble “Oxen” in having a recapitulatory structure. As I argue in this chapter, reading the novel in light of recapitulation clarifies Stephen’s reactions to language and his epiphanies; it also suggests some answers to outstanding questions about the novel’s vexed relation to the bildungsroman.

*Portrait* has long been called a bildungsroman, though the fit is generally considered awkward. Its primary narrative, the *Bildung* plot, is continually disrupted by flashbacks, moments of timelessness or visions of a distant, even prehistoric, past. Whether we call these interruptions epiphanies, like Tobias Boes (“*Portrait*” 767), markers of serial time, like Michael Levenson (“Stephen” 1020), or “Rimbaudian” interruptions of “a Flaubertian field” like Moretti (*Way* 244), their effect is to awaken Stephen’s cultural and animal memories from “the slumber of centuries” (*Portrait* 100); awakened, he sees through the “strange eyes” (19) of his younger self and of his forebears, both human and “infrahuman” (167). These disruptions don’t prevent *Portrait*’s overall structure from conforming to the *Bildung* plot, but they undermine notions of personal and historical progressivism by riddling the plot with gaps and time reversals.

My reading therefore contrasts with Karen Lawrence’s claim that “moments of revelation mark the stages of Stephen’s journey towards identity” and thus confirm the

---

27 *Portrait*’s vexed relation to the bildungsroman is analyzed by Boes, Castle, Esty, Levenson, Mitchell and others. Few see it as a straightforward bildungsroman; but see Thornton (*Antimodernism, passim*) and Norris (*Joyce* 184).

28 Notwithstanding a very different methodological framework, my reading is structurally similar to Froula’s psychoanalytic and feminist reading of *Portrait* as a modernist bildungsroman; Froula argues that Joyce subverts the plot of initiation into the “father’s culture” by keeping “the repressed substratum—this Minoan-Mycenaean layer—of female identification within masculine identity in view throughout Stephen./Joyce’s artistic development” (20).
bildungsroman’s “central notions of identity and vocation.” In *A Portrait*, argues Lawrence, “the basic idea of growth and development, however problematic, is, nevertheless, ultimately accepted” (32). In my account, by contrast, epiphanies puncture rather than propel the continuity and gradual self-becoming central to *Bildung*; they achieve this disturbance by repeatedly calling up the ancient past—phylogeny—into the course of Stephen’s life, or ontogeny. Yes, growth and development are accepted, but on highly problematic terms given the bildungsroman’s historical connection with the aesthetic, political and scientific thinking that produced recapitulation theory. A fascinating corollary emerges from this interpretation: Stephen’s epiphanies have a material origin (in the senses and the body) but an apparently transcendental effect—a seamless merger of Symbolist and Naturalist ideas philosophies into a distinctly modernist aesthetic.29

Stephen’s epiphanies are triggered by language, to which he is very sensitive. This is especially true of words linked through personal association, etymology or literary tradition to sex and the body. Thus Stephen’s growth towards artistic and spiritual maturity is repeatedly derailed by his unbidden response to the very medium of his chosen art: language. Figured as a vast embodied archive, language invites the phylogenetic plot to collide with the *Bildung* plot. The collision of narrative dynamics does not necessarily mean Stephen’s artistic prospects are bad. But it does ironically undermine his theory of literary history as “progress” from “lyric” through “epic” to “dramatic” modes (214–15) and his faith in his artistic “destiny” (171).

29 For a similar statement about modernism’s mixed Symbolist and materialist legacy, but one based on very different evidence, see Gallagher (157–59, 170–72).
A Portrait: An Onto-phylogenetic Bildungsroman

Portrait’s account of individual growth has long been likened to historical narratives, a pattern whose obvious recapitulatory implications have often been noted. Yet for most critics, recapitulation tends to be a mere metaphor, heuristically productive but little more. It is in an anagogical rather than evolutionary sense that Kenner links Stephen’s youth to “the childhood of the race” (“Perspective” 365). This tendency annoys Mark Gaipa, who complains that “critics may agree on the presence of recapitulation in Joyce’s texts, but few are willing to see it as more than a metaphor or framing device” (197).

A recent exception is Hiromi Yoshida’s recent book on Joyce and Jung. Yoshida interprets “the phylogenetic pattern of development in A Portrait” as a parody of the Jungian idea that “psychic development is primarily phylogenetic rather than ontogenetic” (23). Her reading, like mine, sees “Stephen’s psychosexual growth” as a recapitulatory movement (1). Yet our projects differ significantly, largely due to Hoshida’s Jungian framework. For Jung, phylogenetic memories can catalyze ontogenetic change and thus play a central role in self-enlightenment; by this logic, Stephen’s visions of time past contribute positively to his development (Yoshida 24–25). In my reading, phylogeny interferes with, and challenges inherited models of, progressive Bildung.

By focusing on mythic, historical and literary archetypes, moreover, Yoshida privileges a cultural understanding of phylogeny without considering its biological basis. The cultural past is certainly important to the recapitulatory structure of A Portrait, but it is inextricable from the evolutionary past. In the late nineteenth- and early-twentieth centuries, there was, as Huxley and Haddon note in We Europeans (1936), “a lamentable

---

30 See, e.g. James Baker, Margaret Church (“Time”), Doherty and Gose Jr.
31 See, e.g. Day (184), Fitzpatrick (131), Froula (3), Hart (437n7) and Hutchings (339).
confusion between the ideas of *race, culture* and *nation*” (107), and the nuances that arise from this “fallacy which equates ‘race’ with ‘nation’” (272) have recently been examined in relation to *Portrait* (Cheng *passim*; P. Lewis 36–42). When Richard Peterson describes Stephen’s development as his “experiences and his growing consciousness of historical and racial patterns” (24), “experiences” and “historical and racial” conscience both have biological connotations—the former because they implicate sensation, perception and libido; history and race because they would have suggested, to Joyce’s contemporaries, a mosaic of culture, language, ethnicity and biology.

Recapitulation is subtly manifested in *Portrait*, whose biological concerns are less clearly evolutionary than erotic and reproductive. But then reproduction inevitably implies phylogeny, for it is the mediator between ontogeny and phylogeny (de Beer 11). Through reproduction, the bounds of the individual are breached and extended into generations, and through it lineages give rise to successions of new, developing individuals. Evidence for *A Portrait*’s phylogenetic plot therefore requires a reading attuned to reproduction’s mediating role.

Just this sort of reading is offered, in passing, in Maud Ellmann’s recent *Nets of Modernism*. Noting Stephen’s shock at the word “Foetus,” she traces the word’s effect to the troubling relation of child to mother, a relation embodied during gestation by the umbilicus and in later life memorialized by the child’s navel. Both navel and navelcord become important to Stephen in *Ulysses*, marking his broken maternal connection and, by extension, his severed physical link, “through the successive anastomosis of navelcords,” to the deep past (*Ulysses* 374). The embryological imagery associated with

---

32 “Race is the essential element in nationality,” says Birkin in D. H. Lawrence’s *Women in Love* (30).
Stephen is reflected, Ellmann theorizes, in the heavily networked, “omphalocentric”
structure of *A Portrait* and *Ulysses* (*Nets* 169). And, because the “strandentwining cable
of all flesh” fuses the individual (Stephen) “to Edenville” (*Ulysses* 38), the novels’
structure is “partially indebted to Darwin’s notion of the webs that implicate the human
in the animal” (M. Ellmann, *Nets* 169). The navel that Stephen gazes upon is an
ontogenetic remnant of a human and animal legacy.

Ellmann’s Darwinian connection invites a reading of *Portrait* attuned to
contemporary biology and its popular disseminations. Far from esoteric or trivial, such a
textually grounded reading of plot structure is necessary: after all, without considering
biology we cannot do justice to Stephen’s aesthetic, in which gestation, reproduction and
evolution feature prominently. My goal, then, is to uncover the biological grounds for the
recapitulatory metaphors favoured by Joyce and critics alike. Contextualizing and
concretizing these metaphors, I propose that Stephen’s fitful development (and *Portrait*’s
structural subversion of the *Bildung* plot) reflects Joyce’s heterodox use of recapitulation.
Rather than becoming self-realized by surpassing the stages of his ancestral past, Stephen
is repeatedly thrown off his developmental trajectory when language and his senses
revive his ancestral past. It is unclear whether Joyce offers a definite alternative form of
development; but his simultaneous subversion of *Bildung* and recapitulation opens the
bildungsroman to new forms of growth and self-realization, and suggests new ways in
which the individual stands in relation to history.

**Language Acquisition and the Ontogenetic Structure of A Portrait**

It is widely recognized that *Portrait*’s structure mirrors Stephen’s developing
consciousness. As Sidney Feshbach puts it, “the principle of the gestation of Stephen’s
soul is correlated with the principle of the organization of the novel” (289). And because Stephen’s sense of reality is primarily linguistic, the main marker of his development is language. As in most bildungsromans, Stephen’s ontogenetic development is implied by the story’s temporal span, which encompasses the years from infancy to adulthood. But his development is expressed—and, by readers, experienced—by the narration’s stylistic changes. Stephen’s “consciousness is ‘narrativized’” as a stream of “phrases and sentences,” writes R. B. Kershner in his Bakhtinian reading of A Portrait (237); or, as Campbell and Robinson have it, “the style matures with the growth of the hero” (357).

Stephen’s language acquisition and the maturing style are, in turn, correlated with the growth of his body. The way Joyce treats this correlation was so innovative that many early readers of failed to detect structure of any kind in Portrait. Yet the correlation itself would have been uncontroversial, resting on the solid foundation of developmental psychology, which saw childhood growth and language acquisition as overlapping phenomena. In his seminal essay “On the Acquisition of Language by Children” (1876), Hippolyte Taine reports that “the progress of the vocal organ goes on just like that of the limbs; the child learns to emit such or such a sound as it learns to turn its head or its eyes” (252).

The correlation between language acquisition and bodily growth (both ontogenetic processes) also suggests phylogenetic and historical parallels. In other words, language acquisition recapitulates glossogeny (language evolution), as ontogeny does phylogeny. Thus Taine casually equates an infant’s “mental state” with “that of primitive people at the poetical or mythological stage” (258). For Ernest Renan, similarly, “the language of

---

33 See Duckworth’s “Reader’s Report,” which finds novel “formless” as well as rich in “dirty words” (Portrait 320).
the child” (79) reveals “the primitive theme concealed beneath derived forms” (78). Like Taine after him, Renan studies language as part of a larger “experimental science of the human spirit” (79), and his framework is likewise recapitulatory: “Each individual following in turn the line followed by all of humanity, the entire series of the human spirit’s development answers in general to the progress of individual reason” (37). The result is a wholesale dissolution of boundaries between spiritual, cultural and biological growth and evolution; language and soul are analogues of “physiology and anatomy” (37), available to the methods of “the geologist” (39):

just as there is, besides the science of the organs and their operations, another science concerned with the history of their formation and their development, there would have to be, besides psychology, which attempts to describe and classify the phenomena and functions of the soul, an *embryogeny* [embryogénie] of the human spirit…. If the primitive state of humanity has disappeared without a trace, the phenomena that characterized it still offer us their analogues. (37, original emphasis)

Equating language evolution, foetal morphogenesis and the growth of the soul, Renan subtly counters the progressivism of his recapitulatory model: overtly enforcing the boundary between primitive and modern, he also subtly dissolves it by levelling the established hierarchy of body, mind and spirit—the very hierarchy used to rank primitive and civilized peoples. Joyce, who saw in Renan a kindred heretic (Rabaté 37), also exults in transgressing boundaries, be they between human and animal, sacred and secular, high and low, Symbolist and Naturalist, beautiful and ugly. If *A Portrait*’s structure mimics the gestation of a soul, it is a soul whose growth and linguistic endowment mimic the
“embryogeny” of “organized bodies.” “The soul,” Joyce writes in his Paris Notebook (1903), “is the first entelechy of a naturally organic thing” (qtd. in Gorman 95).

“If the primitive state of humanity has disappeared without a trace, the phenomena that characterized it still offer us their analogues” (Renan 37): Renan’s pre-Darwinian use of recapitulation beautifully expresses how Joyce sneaks the body into a narrative whose focalizer, Stephen, wishes to transcend it in favour of “a mental world” (Portrait 206). With few exceptions, the text conceals his body and its foetal, historical and animal residues; like Renan’s primitive states, however, the body is latent in its linguistic analogue. Language betrays what Bakhtin calls “biological time” (the hero’s age, his progress from youth to maturity)” (Speech 17), the psychobiological basis of the socially-oriented “biographical time” (“birth, childhood, school years, marriage”) that characterizes the modern novel (ibid. 11).

Fittingly, biological time is exposed at decisive moments in Stephen’s development. Just before accepting his artistic destiny, for example, Stephen sees some schoolfellows bathing. Watching them, he is pained by “the signs of adolescence” revealed by “their pitiable nakedness,” for they reflect his own bodily changes: they remind him “in what dread he stood of the mystery of his own body” (168). To neutralize this affinity, Stephen recalls his linguistic superiority. He can ignore the implication of his bodily likeness with the bathing boys because the body and language are correlated, and his own language is so evidently above theirs. Yoking bathers’ bodies to their “banter,” he can use his own “formal[ity] in speech” (180) as a fulcrum for setting apart his apparently similar body. Having established this difference, he can see “how characterless they looked” compared with his own self-conscious individuality; “their banter,” which allows him to view them
“collectively,” confirms “his mild proud sovereignty” (168). Having shaken his physical resemblance with his peers, he can reconceive his adolescence not as a change in bodily aspect but as a metamorphosis from puerile body to mature spirit: “His soul had arisen from the grave of boyhood, spurning her graveclothes” (170).

The irony, the evident insufficiency of Stephen’s protective delusion, is unmistakable—not least because the girl he then imaginatively transforms “into the likeness of a strange and beautiful seabird” refuses to conform to his spiritual vision: “her long slender bare legs were delicate as a crane’s and pure save where an emerald trail of seaweed had fashioned itself as a sign upon the flesh” (171, my emphasis). Stephen tries to refine the girl’s “boldly” exposed thighs out of existence (171), anticipating his thoughts “on the correspondence of birds to things of the intellect” (224) and, in the figure of ibis-headed “Thoth, the god of writers” (225), to the rarefied realm of literature. But the seaweed mars the illusion of purity and pure language, a reminder that language can, like clothing, conceal the body, but not erase it. (Thus Portrait anticipates Finnegans Wake’s delightful coupling of “foetal sleep” and “fatal slip” [563], the slip being one of Joyce’s favourite “definite articles of evolutionary clothing” [ibid. 109]).

Language, body and ontogeny are even more entwined in the novel’s opening, when Stephen tries to sing “O, the wild rose blossoms” but produces “O, the green wothe botheth” (7). The linkage is especially stark compared with the opening of Great Expectations: “My father’s family name being Pirrip, and my Christian name Philip, my infant tongue could make of both names nothing longer or more explicit than Pip” (3). Pip’s and Stephen’s stories both begin when they are infants struggling to speak, but their struggles are very differently presented. Pip’s struggle is recounted in adult retrospective
and adult language; it is *told* in what Joyce calls the “iron, memorial aspect,” which distorts “the features of infancy” (“Portrait” 257). By contrast, Joyce *shows* the result of Stephen’s fumbling tongue, consistent with his view of passing time experienced as “a fluid succession of presents” (*ibid.* 257).

Painting a series of experiential portraits, Joyce couples development (and therefore the structure of his bildungsroman) with Stephen’s sensory and perceptual world—the muddy zone between mind and body—and with his anatomy—his immature vocal apparatus. The opening passage’s sensuousness reflects a mind almost wholly constituted by perception. And though his language soon sheds its patent link with the oral organs, his fascination with words will remain embodied, either directly through its vocal production or indirectly through its impact on the emotions and physical desire. Fittingly, then, language is connected, for Stephen, to excremental and sexual functions. It consistently marks the presence of the flesh: the succession of styles indirectly keeps the “biological time,” so evident in his infant lisp, throughout the novel.

Particularly important are Stephen’s responses to certain phrases and words, most famously “Foetus.” He encounters the word etched on a desk in the anatomy theatre where his father had once carved his (and also Stephen’s) initials. Stephen’s reaction is visceral—the word “startle[s] his blood”—for he is “shocked … to find in the outer world a trace of what he had deemed till then a brutish and individual malady of his own mind. His monstrous reveries came thronging into his memory. They too had sprung up before him, suddenly and furiously, out of mere words” (89–90). “Foetus” is an objective correlative for Stephen’s adolescent fantasies: it expresses what his animal body only
sensed and answers his “wondering” about where—“from what den of monstrous images” (90)—his lust originates.34

With “monstrous,” Joyce undermines the divide Stephen seeks to establish between body and language, “animal” and “mental.” Though he knows true art can excite sexual emotions, admitting to Lynch that “I also am an animal,” he insists on ignoring that aspect of himself because “we are just now in a mental world” (206).35 Stephen’s sexual thoughts are often called “monstrous”—three times in connection with “Foetus” (90 [twice], 92) and once with his phylogenetic “dreams, peopled by ape-like creatures” (116). “Monstrous” highlights animality, especially the “bestial part of the body able to understand bestially and desire bestially” (139–40), and does so in a particularly inconvenient manner for Stephen’s dualism. Indeed, throughout the novel, “monstrous” describes, as its etymology and cognates “mental” and “mind” would suggest (Skeat 363, 376), “thoughts,” “reveries” and “dreams,” infecting these with the mark of the flesh.

Stephen founds his mythic identity on the invention of human flight, but of course Daedalus is also credited with that monstrous hybrid, Minotaur.

Stephen’s encounter with “Foetus” cements the bonds between word and lust, flesh and mind; from this moment on, his mind insistently infects language and speech with traces of the sexual body. Wandering the red-light district “like some baffled prowling beast,” he seeks to release not only his bodily needs but also “the unspoken brutal words rush[ing] forth from his brain” (99); his lust is “but the echo of an obscene scrawl” (100).

34 Maud Ellmann claims that Stephen’s reaction to “Foetus” resists explanation (“Polytropic” 95), but his shock is perfectly consistent with a sheltered Irish-Catholic upbringing. In the Trieste Notebook, Joyce calls “the Irish artist and thinker … a being without sexual education” (Portrait 295).
35 See, however, Vernon Lee’s distinction between the “material, actual” and “legal illusory act of owning” and the “spiritual act of appreciation”: “all strong aesthetic feeling will always prefer ownership of the mental image to ownership of the tangible object” (“Art” 817–18).
The prostitute’s “softly parting lips” kiss him physically but also press upon “his brain … as though they were the vehicle of some vague speech” (101); afterwards, his own lips feel tainted by the “lewd kiss” and “foul and shameful words” alike (105). Finally, when he confesses, word and body merge as “his sins trickled from his lips, one by one, trickled in shameful drops from his soul, festering and oozing like a sore” (144). Long before Beckett coined the epithet, Joyce was a “biologist in words” (“Dante…” 123).

Words, Sex, Plasmic Memory and Narrative Structure

Through its carnality, language fuses A Portrait’s content and form; its changing style literally embodies the bildungsroman’s developmental structure. That is, the novel’s structural mechanics are visible in the behaviour of individual words and motifs. Not just any word, of course: Stephen finds all words “mysteriously alive” (Budgen 57) but the liveliest are those that relate to reproduction, or at least sexuality. Sometimes, as in “Foetus,” the sexual associations are overt. “Kiss,” too, is clearly erotic, be it his mother’s bedtime kiss (14), the kiss he refuses Emma (70) or the prostitute’s “lewd kiss” (105). A kiss is more than just a kiss, always carrying, for Stephen, the hint or danger of “the contact of her sex” (242). There are also obvious sexual connotations to “suck,” the novel’s first “queer word” (11). To its implication of non-reproductive sex, etymology adds a procreative aspect: “suck,” as Stephen would know from Skeat’s Etymological Dictionary, means “imbibe, esp. milk,” and derives from the Sanskrit root “SU, to generate” (608). Likewise “tundish” appears, as Joyce surely knew, in Shakespeare’s Measure for Measure as a metaphor for penis: Claudio is condemned to die “for filling a bottle with a tundish” and thereby getting Juliet pregnant (qtd. in Crowley 90). Less

36 In Stephen Hero, Stephen “read Skeat’s Etymological Dictionary by the hour” (32); see Whittaker.
evident is the sexuality in the other notable words that arrest Stephen’s attention—“Lotts,” “tundish,” “ivory,” the bits of prose and poetry. These, however, are sexualized by etymology, intertextuality or circulation in the novel’s complex network of motifs. In fact, of all the words that strongly affect Stephen, only “home, Christ, ale, master” (189) are asexual.

The words are often sexualized by textual memory. “Lotts,” a surname painted on a stable wall, mysteriously cures Stephen of his “baffled desire” for Emma (86), but the mystery is somewhat clarified when Lotts re-appears in the lyric “Lottie Collins lost her drawers” (197, my emphasis). “Detain” seems chaste enough—Stephen borrows it from John Henry Newman’s description of the Virgin Mary in order to distinguish aesthetic from mercantile language—but then again, to Stephen Mary is never quite pure. It is after a prostitute “la[ys] her hand on his arm to detain him” that Stephen loses his virginity (100). The detaining hand recurs in connection with Emma, whose “hand had lain in his an instant, a soft merchandise” (219, my emphasis) and in his rapturous reaction to “Mulier cantat,” an expression whose “soft beauty” touches him “with a touch fainter and more persuading than the touch … of a woman’s hand” (244, my emphasis). Even when “used according to the literary tradition,” words are infected by “the tradition of the marketplace” (Portrait 188)—literally, a pornographic economy.

Similar associations emerge between sex and literary language. Fragments from Stephen’s reading accompany or trigger moments of emotional or aesthetic exaltation, which, to his dismay, metamorphoses into lust. He likes Ben Jonson’s “I was not wearier where I lay” because it reminds him of the “pleasure” rather than “the essence of beauty,” but pleasure can be dangerous: so a “phrase, tarnished by time, of chambering
... st[ings] his monkish pride” and drives him back to the safer, “spectral words of Aristotle or Aquinas” (176).

Chambering recurs when Stephen misquotes Thomas Nashe’s “Brightness falls from the air” as “Darkness falls from the air” (234, 232). The lyric transports him back to Elizabethan times, but the words that first evoke “trembling joy, lambent as a faint light,” inexplicably grow monstrous with “the darkness of desire”:

What was their languid grace but the softness of chambering? ... [H]e tasted in the language of memory ambered wines, dying fallings of sweet airs, the proud pavan, and saw with the eyes of memory kind gentlewomen in Covent Garden wooing from their balconies with sucking mouths and the pox-fouled wenches of the taverns and young wives that, gaily yielding to their ravishers, clipped and clipped again. (233)

Although “dainty” (176), the Elizabethan lyrics are infected by (and infectious with) the sordidness and sexual obsessions of their age. Language, Emerson writes, is “fossil poetry,” a repository of the antique imagination; but, as Richard Chenevix Trench replies, words also “embody facts of history, or convictions of the moral common sense, as of the imagination or passion of men; even as, so far as that moral sense may be perverted, they will bear witness and keep a record of that perversion” (13). Stephen’s “ambered wines” are inevitably perverted by their historical link to “pox-fouled wenches”; both valences are fossilized in the lyrics he admires.

In the remarkable passage that follows, Stephen associates his increasingly sexual vision of Elizabethan times to the odour of Emma, who has just walked by: “Vaguely first and then more sharply he smelt her body. A conscious unrest seethed in his blood.
Yes, it was her body he smelt, a wild and languid smell, the tepid limbs over which his
music had flowed desirously and the secret soft linen upon which her flesh distilled
odour and a dew” (233). Nashe’s song has ineluctably led Stephen’s mind to sex, and not
just because “dew” is a Joycean euphemism for semen (e.g. Portrait 217; Ulysses 350).
His ability to smell Emma at all betrays an atavism; indeed he sees the Elizabethan
women “through the eyes of [a] memory” that transcends his own experience. As
Havelock Ellis puts it, “the grosser manifestations of sexual allurement by smell belong,
so far as man is concerned, to a remote animal past” (110–11); nevertheless, “the latent
possibilities of sexual allurement by olfaction … still remain ready to be called into
play,” especially among “poets and novelists” (Ellis 73).

Perversion begets perversion: the associations spurred by Nashe grow increasingly
bestial. Musing on Emma’s smell, Stephen’s feels a louse on his neck and recalls the
theory that lice

were not created by God with the other animals on the sixth day. But the tickling of
the skin of his neck made his mind raw and red. The life of his body, ill clad, ill fed,
louse-eaten, made him close his eyelids in a sudden spasm of despair and in the
darkness he saw the brittle bright bodies of lice falling from the air and turning
often as they fell…. He had not even remembered rightly Nash’s line. All the
images it had awakened were false. His mind bred vermin. (233–34)

So close on the heels of Emma, in the episode following the composition of his villanelle,
the louse undermines Stephen’s opposition of sex and art. “Lice,” suggests Jean-Michel
Rabaté, “embody the stubborn resistance of nature or the body to ideas” (86), and indeed
the louse on Stephen’s neck gives us a rare view of his malnourished body. Like aging in
The Picture of Dorian Gray, tuberculosis in The Magic Mountain, homosexuality in Maurice, and loveless sex with Clara triumphant over soulful love with Miriam in Sons and Lovers, the louse on Stephen’s neck is typical of the modernist bildungsroman’s acknowledgement and even celebration of the flesh and its purported pathologies: it confronts the idealist, spiritual endpoint of the Bildung plot, asserting “the body’s insistent refusal to coincide with the products of the mind, of social, historical or philosophical consciousness” (Minden 217). The louse further debases Stephen’s view of Elizabethans, lending a vampiric and entomological allure to the “kind gentlewomen … with sucking mouths,” and reminding us that Nashe’s song, “In Time of Pestilence,” is a report from a time of plague—a disease caused by fleas, another insect with sucking mouthparts, one with a long history in erotic poetry (most famously Donne’s).

Apparently generated by an erotic olfactory experience, the louse joins Lynch in ironically exposing the “scholastic stink” of Stephen’s aesthetic theorizing, which includes such questions as “Can excrement or a child or a louse be a work of art?” (214). Portrait insists on linking art with offspring or waste; that lice are self-begotten can only worry Stephen, who would prefer to reserve creation ex nihilo for artistic rather than biological processes. Uncreated by God, born of the body, the louse travesties Stephen’s ideal of artistic “postcreation” (Ulysses 373). “His mind bred vermin”: Stephen’s disgust reveals his wish to keep language pure. This wish is frustrated by his own body.

Stephen is similarly disturbed by his spontaneously composed nonsense poem (“the ivy whines upon the wall…”), which makes another word “sh[ine] in his brain”: “ivory, ivoire, avorio, ebur” (Portrait 179). Like the words examined above, “ivory” is sexualized, here largely in connection with Eileen Vance, whose “long and white and
thin and cold and soft” hands (36) help Stephen understand why Mary is called “the Tower of Ivory” (36). The “ivory” motif links Stephen’s sexual and artistic developments. Eileen is his first potential wife (8) and therefore, to his mind, his first muse. And though “ivory” lacks any etymological hint of procreation, Skeat’s entry for the word encourages a fruitful game of cross-referencing. “Ivory” seems to derive from the Sanskrit “ibha, an elephant” (304), and “elephant” from the Hebrew “eleph, aleph, an ox” (187); and the ox, a beast central to Stephen’s personal mythology, is associated with fertility (as Pasiphaë learned the hard way). “Ox” derives from “ukshan … a Vedic epithet of the Maruts [“storms”] who, by bringing rain … impregnate the earth like bulls…. Ox is ultimately co-radicate with humid” (Skeat 412). Both oxen and water play major roles in Stephen’s imagery of both artistic production and sexual arousal and orgasm. And the ox-humid association clarifies how Eileen’s “cold white” hands become, as it were, the “corpse-white” bodies, wet with “cold seawater,” of the schoolboys who Hellenise Stephen’s name as “Stephanos Dedalos” and “Bous Stephanoumenos! Bous Stephaneforos!” (168). These epithets link him to the sacrificial bull (Bous) and trigger his first conscious identification with Daedalus, “hawk-like man” and designer of fertile artificial bulls. Stephen the bull (and “bullockbefriending bard” [Ulysses 36]) is now primed for an artistic epiphany—and when it comes, it is fittingly from seeing a bird-girl with thighs as “soft-hued as ivory” (Portrait 171).

“The letter! The litter!” puns Finnegans Wake (93), merging writing with both waste and offspring. Portrait also relates dirty words to the sexual, reproductive body and in turn relates these, in spite of Stephen, to art. By the time he writes his villanelle, he has

---

37 Of “Oxen of the Sun,” Joyce wrote “I interpret the killing of the sacred oxen as the crime against fertility by sterilising the act of coition” (qtd. in Budgen 215). See also Splitter on Joyce’s “Watery Words.”
reimagined the Creation itself as an artistic, reproductive act: “in the virgin womb of the imagination the word was made flesh” (*Portrait* 217). The flesh, always sexual for Stephen, is also always “bestial” (138); “the foul long letters he had written” to infect the eyes and minds of “a girl” are one with the lust that populates his “dreams” with “apelike creatures” (115–16). The “apelike creatures” are an oneiric atavism, a recapitulatory connection to the animal past still dormant in his language and his body. This inheritance hinders Stephen’s religious and artistic ambitions and, more generally, his sense of individuality. It is an attempt to escape this legacy, to forget that he was born of parents who “did the coupler’s will” (*Ulysses* 38), that Stephen reconceives art as “life purified in and reprojected from the human imagination” (*Portrait* 215).

**Linear Growth versus the Memory of Deep Time**

Stephen feels words most strongly when their history, etymological, literary or personal, is sexual. And sex derails the smooth upward curve of the *Bildung* plot, partly because it implies inviting other participants into the traditionally individualistic activity of self-cultivation, partly because, as Temple observes in connection with “the law of heredity,” “reproduction is the beginning of death” (*Portrait* 230) through the creation of other beings. The power Stephen feels in Davin’s story of the woman in the Ballyhoura Hills is surely derived from the fact that she is shirtless, pregnant and offering milk; by elevating her into “a type of her race and his own” (183), Stephen turns his response to sexualized or reproductive language (here, Davin’s evocative story) into a spur for self-development—the “soul waking to the consciousness of itself” (183).

Stephen’s aesthetic experience of language shapes his development, making it a determinant of the novel’s narrative structure. Words trawl the depths of his psyche and
fish out strange, often sexual emotions. These are characterized as a sort of unfolding: association catches association, moral or physical stimulus elicits physical or moral reactions, eventually culminating in an “epiphany” (Stephen 216), a term deleted from Portrait but partly retained in “claritas” (213). Even if aesthetic emotion is ultimately “static,” its genesis is complex and multi-staged: the words that Stephen “epiphanise[s]” (Stephen 218) have histories, traceable in the motifs and verbal echoes that give the novel its ontogenetic-linguistic structure; their histories also exceed his own biography, merging with “the literary tradition,” “the marketplace” (Portrait 188), and the ages going back to the origins of language in bodily gesture. The dual, static and historical, nature of Stephen’s epiphanies finds structural expression in the narrative’s ability to pause while encompassing huge expanses of time.

This narrative dynamic helps explain why Portrait resists the generic mould of the bildungsroman. On the whole, Portrait conforms to the traditional structure of the genre, but the developmental, progressive momentum of the narration is continually stalled by epiphanic pauses and temporal enfoldings incompatible with Bildung’s futurism. The primary narrative stream (Stephen’s Bildung) is repeatedly disrupted if not interrupted by narrative obstacles (words, sights, smells), resulting in narrative eddies in which the past recirculates. To explain this narrative turbulence, Tobias Boes points to the clash between two characteristically Joycean devices: the “entirely conjunctive” motif and the “fundamentally disjunctive” epiphany (“Portrait” 767). The motif serves the story of gradual, progressive self-formation, the Bildung plot in which Stephen himself believes (he feels there is an “end he had been born to serve” [165]); the epiphany, by contrast,

38 Joyce was fond of saying “In the beginning was the rhythmic gesture” (Mary Colum qtd. in Cope 73).
disrupts this plot. (In Ulysses, Stephen offers a similar model by comparing his continuous self-identity with his body’s continual self-reinvention: “I, I and I. I” [182].) Michael Levenson similarly finds the narrative caught between linear growth and the “serial repetitions” of daily, seasonal and historical existence: “to our question—What is the shape of a life?—the upward curve of bildung suggests one answer, the unswerving line of repetitions another” (“Stephen” 1021). The resulting turbulence produces a narrative structure notoriously difficult to define. Far from invalidating the conventions of the bildungsroman, these turbulent dynamics lay them bare, revealing the genre’s recapitulatory chronotope, in which “man’s individual emergence is inseparably linked to historical emergence” (Boes, “Portrait” 767). This dual emergence forms, Boes argues, “a dialogue between linear and cyclical temporalities” (768). Joining motif and epiphany in Bakhtinian dialogue, Boes suggests a narrative structure only partially reducible to individual development; I am proposing that the additional elements, drawn from the deep historical and phylogenetic past, give the novel an onto-phylogenetic structure akin to, but crucially divergent from, recapitulation.

Given Stephen’s peculiar sensitivity to language, words tend to trigger epiphanies that reawaken his individual past (both literal memories and textual echoes) as well as the past of his culture and “race” (Portrait 253). Predictably, these epiphanies are inflected with sexuality and animality. The afterglow of his bird-girl epiphany, for instance, finds him post-orgasmic, “in the languor of sleep. His eyelids trembled as if they felt the vast cyclic movement of the earth” (172): his vision is no longer individual but geological and universal. Removed from his self, thrown into “some new world, fantastic, dim, uncertain as under sea, traversed by cloudy shapes and beings” (172), he re-experiences
“the vapoury sky” of Nighttown, “another world” in which he has “awakened from a slumber of centuries” (100).

How sexuality mediates the archaeological depths of Stephen’s visions is suggested by artistic inspiration and poetic composition, a process in which aesthetic stasis is inextricably fused to erotic kinesis. Just after his talk with Lynch, Stephen awakens from the wet dream that inspires his villanelle: “Towards dawn he awoke. O what sweet music! His soul was all dewy wet…. He lay still, as if his soul lay amid cool waters, conscious of faint sweet music. His mind was waking slowly to a tremulous morning knowledge, a morning inspiration” (217). The moment of artistic inspiration, “an enchantment of the heart,” is patently reproductive: it is triggered by a sexual dream and metaphorized as “the word made flesh” “in the virgin womb of the imagination” (217). Similarly reproductive is the process of literary composition. It is, however, a reproductive conceit tinged with the ultimate stasis of death: “an enchantment of the heart” echoes Stephen’s description of “the luminous silent stasis of esthetic pleasure, a spiritual state very like to that cardiac condition … called the enchantment of the heart” (213); it is a neurologically induced heart attack, a momentary death—a petite mort. It is “the most profound sentence,” as Temple cryptically puts it: “Reproduction is the beginning of death” (230).

In its analogy to death, aesthetic experience stops and simultaneously opens up time, derailing the train of verbal and thematic associations that produce the developmental plot. Time collapses: “Was it an instant of enchantment only or long hours and years and ages?” (Portrait 217). In Stephen’s mind, the “instant” contains “ages,” a vague quantity ranging from a period of human history, real or mythical, to a geological era. The orgasmic “instant of blind rut” (Ulysses 199), death, reproduction, the cycle of human
generations and geological time are all compressed in “the instant wherein that supreme
good and poetic beauty, the clear radiance of the esthetic image, is apprehended” (Portrait 213).

Such compression is how the evolutionary past is preserved but also transcended,
according to recapitulation theory, in extant organisms. Thus an evolutionary narrative
lurks beneath A Portrait’s ontogenetic structure. And so for Stephen the aesthetic stasis
of his epiphanies is also, paradoxically, a kind of narrative decompression, a pause
containing and revealing all ages. Achieving the decompression is often just a matter of
finding the right word. It is therefore inaccurate to say, as Jeanne Delbaere-Garant writes,
that “words impress themselves on the Lockean white sheet of his young mind” (132),
for his mind is anything but a tabula rasa. Words call up old memories, images and
emotions from the great cultural and animal repository of his body and mind. Ernest
Fenollosa describes this view of mind and language beautifully: “Every word, a
metaphor, perhaps several degrees deep, still has the power to flash meaning back and
forth between apparently divergent and intractable planes of being.” Fenollosa is well
aware of recapitulation theory, which offers any number of such “planes of being”;
linking extant words to their history, he is convinced that “we should find the whole
theory of evolution … lying concrete in our etymologies” (qtd. in Kenner Pound 105–06).

Fenollosa’s philological perspective suggests how words so powerfully affect
Stephen’s growth and Joyce’s narrative. Language is an archive of cultural and biological
memory, as Trench puts it:

just as in some fossil, curious and beautiful shapes of vegetable or animal life, the
graceful fern or the finely vertebrated lizard, such as now, it may be, have been
extinct for thousands of years, are permanently bound up with the stone, and
rescued from that perishing which would else have been theirs,—so in words are beautiful thoughts and images, the imagination and the feeling of past ages, of men long since in their graves, of men whose very names have perished, these, which might so easily have perished too, preserved and made safe for ever. (13)

This view of language was hardly new at Trench’s time, but it was only in the mid-nineteenth-century, when “converging lines of evidence … from geology, from archaeology, from biology forced on men’s minds the idea of Prehistory” (Kenner, “Joyce” 46), that philological science could give rise to projects like Skeat’s dictionary, the *New English Dictionary* and, eventually, to Pound’s theory of the ideogram. In other words, philology and biology trace back, from different data, similar histories. As Kenner writes, “in the episode of *Ulysses* of which the “art” is Philology, Joyce wrote that ‘the cords all link back, strandentwining cables of all flesh.…’ We are joined—this is the theme of Comparative Philology—as much to one another as to the dead by continuities of speech as of flesh” (*Pound* 96).

These continuities produce *Portrait*’s narrative. When words form chains of association in Stephen’s mind, we see his development and maturation; when they suddenly unfold and burst forth with etymological and literary associations, we catch glimpses of his historical character, his place at the present end of an “endless succession” of generations. Between motif and epiphany, progressive *Bildung* and reversionary memory, is the word whose history is sexual, reproductive or more generally carnal: it summons Stephen into the past. When he hears “kiss” and “suck,” he relives his mother’s bedtime kiss and the hotel lavatory; “ivory” has a similar, if more complex, effect. These flashbacks resemble Proustian involuntary memory, or any other contemporary model of
unwilled associationism; no evolutionary theory is necessary. Other words, however, take Stephen deeper into time, back before his birth, his historical age, even the evolutionary emergence of his species. Here memory’s biographical and psychological dynamics must be connected to a collective, historical or archetypal unconscious, a connection provided by the link between ontogeny and phylogeny.

“Foetus” animates a past Stephen is too young to know: in the empty anatomy theatre “he seemed to feel the absent students about him…. A vision of their life, which his father’s words had been powerless to evoke, sprang up before him out of the word cut in the desk” (89–90). In the pub afterwards, Stephen feels older than his father’s peers (95), as if his personal experience had accessed a deep phylogenetic consciousness. As we shall see, a similar reversion is later induced by the phrase “a day of dappled seaborne clouds” (Portrait 166). Suggestive too is “a maid in a white cap and apron … watering a box of plants on a sill” (91), which to Stephen’s mind, still ruffled by “Foetus,” “shone like a slab of limestone”: Cork, like most of southern Ireland, lies on Carboniferous limestone whose rich fossil beds was enjoying much geological research at the time (see, e.g. Douglas 1909). When words awaken Stephen to the deep past, the associations at work are more than merely psychological and biographical; they call on “the conscience of [the] race” (253), “plasmic memory” (Ulysses 399), even “our noarchic memory” “all over which fossil footprints, bootmarks, fingersigns, elbowdints, breechbowls, a.s.o. were all successively traced of a most envolving description” (Finnegans 80).

The past’s intrusions punctuate A Portrait, usually in conjunction with the sexual words discussed above. Wandering for the first time into Nighttown, Stephen smells

---

39 In “Proteus,” Stephen relives Dublin’s Danish past after “resting his ashplant in a grike” (44) a distinctive crack in limestone that has been scoured by an advancing glacier (OED “grike, n.”).
40 “Noarchic” suggests the anarchy of memorial processes, as well as the archaic age of Noah.
“perfumed” prostitutes and anticipates “sin[ning] with another of his kind” (98–99); yet what sexual initiation brings is less a coming-of-age than an encounter with the depths of the past: “He felt some dark presence moving irresistibly upon him from the darkness, a presence subtle and murmurous as a flood filling him wholly with itself. Its murmur besieged his ears like the murmur of some multitude in sleep; its subtle streams penetrated his being” (100, my emphasis). The murmur seems to be a physiological but also a genealogical reaction—“his blood … in revolt” (100).

Significantly, his ancestral, bestial visions are generated by water. “Suck,” for instance, is sexualized by its association with a lavatory drain. Fittingly, then, the sea has an especially intense effect on him, as if it prompted “the powerful recurrence of the tides within him” (98). Two such moments, occurring in close succession, demonstrate how the deep past frustrates the implicit futurism of the Bildung plot. In both moments, Stephen’s ontogeny and phylogeny visibly interact, but they don’t run serenely in the same direction. The resulting developmental plot is more complicated, less end-directed than we would expect from contemporary understandings of recapitulation.

When his bathing friends call him “Dedalos” and “Bous,” Stephen sees history before his eyes: “all ages were as one to him” (168). Linked to Daedalus, he seemed to hear the noise of dim waves and to see a winged form flying above the waves and slowly climbing the air. What did it mean? Was it a quaint device opening a page of some medieval book of prophecies and symbols, a hawk-like man flying sunward above the sea, a prophecy of the end he had been born to serve and had been following through the mists of childhood and boyhood, a symbol of
the artist forging anew in his workshop out of the sluggish matter of the earth a new soaring impalpable imperishable being? (168–69, my emphasis)

Stephen’s return to the mythic past of Daedalus is also a coming-of-age, a journey out of “the mists of childhood and boyhood” towards “the end he had been born to serve”—the vocational telos of the bildungsroman. The relation between the microcosm of his life and the macrocosm of his cultural and literary history resembles recapitulation. But the resemblance is deceptive: recapitulation demands a straightforward parallel (zygote → adult : ancestor → descendent), whereas Stephen’s vision is chiasmic (childhood → maturity : ancient Crete ← modern Dublin). Chiasmus muddles the unidirectional ontogenetic parallel demanded by recapitulation; and, as Elliott Gose argues, it is one of the novel’s ruling figures, characterizing everything from individual sentences to the structure of the novel as a whole (261). Through its mirroring structure, chiasmus gives away Stephen’s delusion that “the past [is] past” (Portrait 146); the past, indeed, gives substance to his prophetic visions.

Directly preceding his vision of Daedalus, Stephen crosses a group of Christian Brothers, recognizes the wisdom of not taking orders and once again “dr[aws] forth a phrase from his treasure”: “A day of dappled seaborne clouds” (166). Savouring and analyzing the affective and aesthetic power of the phrase, he is overcome by another ancestral recollection. “A faint click at the heart” (an enchantment?), “a faint throb in his throat told him once more of how his flesh dreaded the cold infrahuman odour of the sea”—another recoil from the smell of the animal body. Stephen sees “along the course of the slow-flowing Liffey” (167), which in Finnegans Wake represents ALP’s
development from little cloud to oceanic death as well as the history of all Western
civilization, a vision of medieval Dublin:

like a scene on some vague arras, old as man’s weariness, the image of the seventh
city of christendom was visible to him across the timeless air, no older nor more
weary nor less patient of subjection than in the days of the thingmote…. He heard a
confused music within him as of memories and names which he was almost
conscious of but could not capture even for an instant; then the music seemed to
recede, to recede, to recede. (167)

Stephen reverts to Norse Dublin, experiencing the lives of its inhabitants. In “Proteus,”
the sight of midwives dumping “a misbirth with trailing navelcord” on the beach
(Ulysses 38) induces a similar merger with his ancestors: “a horde of jerkined dwarfs, my
people…. Their blood is in me, their lusts my waves. I moved among them on the frozen
Liffey, that I, a changeling, among the spluttering resin fires” (ibid. 3.45). In the pronoun
“I,” Stephen is both self-divided (“I, a changeling”) and united with another, historically
remote Dubliner (“I moved among them”), as though he were both himself and his
lineage, his whole culture.

“A day of dappled seaborne clouds” is another one of Stephen’s misquotations, this
one of Hugh Miller’s Testimony of the Rocks (1857). An attempt to reconcile the
Biblical account of Creation with recent geological theories of deep time and the growing
fossil evidence of prehistoric life, Miller’s book is ideally chosen to trigger Stephen’s
ancestral memories. The sentence from which Stephen mines the phrase is too long to
quote (Miller 277), but it can be summarized as a thought experiment designed to reveal

41 Miller writes “a day of dappled breeze-borne clouds” (277).
the deep past—which is exactly how words act on Stephen. “[L]ooking back upon myriads of ages” and “calling up in memory what once had been,” Miller’s reader is asked to see, through the eyes of the fallen Lucifer, the geological history of the earth. Miller’s Lucifer is an evolutionary eschatologist, deciphering the future from the bodies of primitive organisms; “like some old augur looking into the inner mysteries of animal life, with their strange prophecies,” he sees, “after the dynasty of the fish had been succeeded by the dynasty of the reptile, and that of the reptile by the dynasty of the sagacious mammal,” that “man was fast coming to the birth” (Miller 277). There is much here to please Stephen, not least Miller’s “lucid supple periodic prose” (Portrait 167) and its celebration of evolutionary teleology. Stephen famously identifies with Lucifer; and, like Miller’s Lucifer playing the role “of an augur,” he looks, as men have “for ages,” for “symbols and portents” in animals (in his own case swallows) (ibid. 224).

Miller’s recapitulatory image, in which evolutionary history is also the ontogenetic narrative of “man … coming to the birth,” is mirrored in Stephen’s aesthetic and affective response to the phrase, “a dappled day of seaborne clouds.” And so it is unsurprising to find, in Stephen Hero, that Stephen’s artistic sensibility drives him to investigate not only the minutiae of his surroundings, no matter how common, trivial or taboo, but also their historical, and prehistoric, depth. He aims to pierce to the significant heart of everything. He doubled backwards into the past of humanity and caught glimpses of emergent art as one might have a vision of the plesiosauros emerging from his ocean of slime. He seemed almost to hear the simple cries of fear and joy and wonder which are antecedent to all song, the savage rhythms of men pulling at the oar, to see rude scrawls and the portable gods
of men whose legacy Leonardo and Michelangelo inherit. And over all this chaos of history and legend, of fact and superstition, he strove to draw out a line or order, to reduce the abysses of the past in order by a diagram (Stephen 37–38).

Joyce forcefully equates the artistic way forward with a reversion to prehistory, but Stephen ignores the call, trying instead to sever himself from the past. He does the same with his own past. To Cranly he insists he “was someone else” when he was in school, implying he is transcending his own history as he grows towards self-realization: “I was not myself as I am now, as I had to become” (Portrait 240). “I cannot answer for the past,” he also says (243), echoing his question to the nationalist Davin: “My ancestors threw off their language and took another…. Do you fancy I am going to pay in my own life and person debts they made?” (203). Stephen envisions Bildung as a successive transcendence of past stages, much as recapitulation theory sees evolutionary progress.

Stephen’s denial of his personal past is coupled with a denial of the “abysses of the past” (Stephen 38). In the diary section that closes the novel, he hands off the faculty of memory, whether personal or historical, to women. “Certainly she remembers the past,” he writes of his mother; “all women do. Then she remembers the time of her childhood—and mine if I ever was a child.” Like Stephen’s other attempts to leave behind his past, it is feeble posturing: as I read it, the following sentence, “the past is consumed in the present and the present is living only because it brings forth the future” (Portrait 250–51), implies that the past is not transcended by but, rather, incorporated into the present.

Ironically complicating Stephen’s naïve historical and biographical model, Joyce highlights the complementarity of “consumed” and “brings forth,” forcing upon Stephen the corporeality of digestion and gestation. As processes for breaking down and building
up organic wholes, digestion and gestation parallel the novel’s problematic merger of epiphany and motif, reversion and progress Stephen’s bivalent metaphor, merging digestion with reproduction, suggests that the past both nourishes and begets the present, their bodies, as it were, continuous both materially and genetically. Development is impossible, Joyce suggests, without the voices of history—and prehistory.

**Conclusion: “The uncreated conscience of my race”**

“The history of his country encloses him so straitly that even in his hours of extreme individual passion he can barely reduce its walls to ruins.”

—Joyce, “James Clarence Mangan” (*Critical* 185)

The voices of time speak through Stephen. He admits as much during his argument with the Nationalist Davin: “This race and this country and this life produced me…. I shall express myself as I am” (*Portrait* 203). Often read as a begrudging admission of his cultural identity, the statement might also be Stephen’s way of opposing the Irish League’s sentimental re-creations of Irish tradition by drawing his own, more bodily link to the past he hears in certain words and senses in the shape or odour of a girl. Rather than play field sports, learn Gaelic or train for battle like Davin, he will leave Ireland “to encounter for the millionth time the reality of experience and to forge in the smithy of my soul the uncreated conscience of my race” (*Portrait* 252–53).

To experience for the millionth time is an odd notion, especially for a callow youth leaving home for the first time. As Levenson notes, Stephen’s vow has the same unnerving seriality as Stephen’s earlier cry “on and on and on and on!” (*Portrait* 172), in which “there is perhaps one ‘on’ too many.” In any case, Stephen’s “act of individuality is only the latest instance, the millionth instance, of a persistently repeated gesture”;

---

42 The conflicting plots of digestion and gestation also play a role in *Howards End*: see page 141 n55.
“either Stephen has already encountered experience many times, or many others have encountered it before him” (Levenson, “Stephen” 1020). But in the context of recapitulation, the coexistence of first and millionth experience, of individual and “many others,” loses much of its paradoxical quality. Even as he sets off to blaze a new path and conscience for his “race,” Stephen’s will is ballasted by the cumulative momentum of Irish and European history. Recapitulation, in fact, encourages a view of the individual as the accumulation of his evolutionary history plus what his own life could contribute to future generations (Gaipa 196ff). As Pericles Lewis argues, “the racial conscience is the source of all Stephen’s experiences, but, as a great soul, Stephen in turn transforms the racial conscience” (Lewis 2). And because “race” would have implied “a combination of historical, cultural, biological, and spiritual conditions” (ibid. 41), Stephen’s vow “to forge … the uncreated conscience of [his] soul” (Portrait 253) seems to recognize the fact that he owes his constitution—culture, biology and soul—to the history of his nation and of his species. This legacy is embodied in the “new secondhand clothes” (252) his mother packs for him as he prepares to leave Ireland; they are new to him, but worn already by other Irishmen. Stephen wears “definite articles of evolutionary clothing” (Finnegans 109), and his artistic deeds, “history repeating itself with a difference” (Ulysses 609), will have to restage “the paleologic scene” in order to reinvent it (Finnegans 73).

Stephen’s departure from Ireland would therefore replay, in macrocosm, his self-exile from home. Striving for “Europe … out there beyond the Irish Sea,” he relates to his nation as he does his family, “hardly of the one blood with them but st[anding] to them rather in the mystical kinship of fosterage, fosterchild and fosterbrother” (Portrait 98).
And yet the nation and the family have strange, ineradicable holds on their legatees. Reject his father as he will, Stephen knows he speaks and sees with his father’s voice and eyes (Ulysses 38). When his siblings sing to stave off their hunger, “he hear[s] the choir of voices in the kitchen echoed and multiplied through an endless reverberation of the choirs of endless generations of children” (Portrait 164); he may leave home, but still he carries their blood. “This race and this country and this life produced me,” he says; “I shall express myself as I am” (203); the pronoun “I,” as I mentioned earlier, is individual but also collective, an outgrowth of “this race and this country.” No wonder, then, that after “wait[ing] for some moments, listening” to his siblings’ song, “he too t[akes] up the air with them” (164). But if it offers a rare moment of community and optimism, the harmony between Stephen and his family is partial, provisional and imperfect. Stephen feels the connection enough to feel guilty when, in Ulysses, he absolves himself of responsibility for his sister Dilly’s bleak fate: “she is drowning. Agenbite. Save her. Agenbite. All against us. She will drown me with her” (233). But despite family resemblance (“My eyes they say she has” [11.233]) and the “us” that binds him to his siblings, Stephen persists in detaching his destiny from theirs.

The same goes for his relation to “the uncreated conscience of [his] race” (253). Much of the phrase’s weight lies in the adjective “uncreated.” Most readers, notes Pericles Lewis, take it to mean that Stephen fancies himself an “artist like the God of creation” (215), the founder of a new Irish nation. But such a world-historical role is hardly consistent with Stephen’s ambition of creating art rather than actively effecting change in Ireland. Lewis favours “the opposite interpretation,” for in Catholic doctrine the only uncreated thing is God. From this perspective, Stephen sees the “race” as “the
source of all experience,” and seeks merely to re-invent it (Lewis 1–2). Lewis’s reading is reminiscent—and perhaps too much so for Joyce’s taste—of recapitulation, in which new adaptations appear by “terminal addition” (Gould, Ontogeny 7), at the end of ontogeny, after all past phylogenetic stages have been re-enacted and superseded. This implication complicates Lewis’s interpretation because it suggests that Stephen’s vow is entirely inward-looking, having nothing to do with Ireland’s collective development; the “uncreated conscience” may well be entirely contained in his own organism, a legacy he desires simply to refine away—to ensure, as he does after his confession, that “life l[ies] all before him” rather than behind (146, my emphasis). He might merely want to transcend or grow out of those parts of his self whose development has stalled.

Given Joyce’s scepticism of recapitulation, I would like to suggest a third interpretation, in which Stephen neither invents nor re-invents the “conscience of [his] race.” Creation is thus neither creatio ex nihilo nor “an imitation of nature” (Critical 145), for it is best illustrated by the louse that is excreted by the body rather than “created by God” (Portrait 233). “Uncreated,” the insect is unsettling to Stephen because if it wasn’t made it was begotten, generated by flesh and feeding upon the body. The louse thus conforms less to Stephen’s ideal of “uncreated” art and nation (in which uncreated things have, like God, no history) than to Joyce’s view that “the artistic process is like a natural process” (Critical 145). In this sense, “uncreated” implies a relative lack of development or form, a meaning contemporarily favoured by D. H. Lawrence. In Women in Love, the coal town of Beldover, whose women stare with the “long, unwearying stare of aborigines” (12), is a “dark, uncreated, hostile world” (13); and, to Birkin, Ursula’s father is an “almost patternless collection of passions and desires and suppressions and
traditions and mechanical ideas, all cast unfused and disunited into this slender, bright-faced man of nearly fifty, who was as unresolved now as he was at twenty, and as uncreated” (288). In this developmental—rather than creative or imitative—sense of “uncreated,” Joyce seems to alert us to the contingencies and openness to revision of individual as well as national identity; after all, the other polyvalent term in his famous vow is “to forge,” which can mean not only to invent or to mimic fraudulently, but also to mould, to fashion, to give shape to. “To forge” a previously unformed “conscience” would therefore suggest the production of an alloy of individual growth and reversionary, collective experience.

How we read Stephen’s vow depends, ultimately, on how far we situate his vision from Joyce’s own. And though the question of ironic distance in A Portrait is unlikely to be solved anytime soon, the fate Joyce reserves for Stephen is clearer in the light of recapitulation. Embodied by the biological processes of ontogeny, Stephen’s development is also rooted in phylogeny, in “the long lane of … generations, more generations and still more generations” (Finnegans 107). If there is any hope for Stephen, it lies in his recognition and acceptance of the deep past’s immanence within him. If the ever-present threat of his personal, cultural and animal past frustrates the straightforward course of his destiny from infancy to vocation, the complex interplay between ontogeny and phylogeny offers another kind of development—messier perhaps but perhaps less amenable to cooptation—which telescopes past and present, artist and animal. As it so often does, Finnegans Wake expresses what Portrait implies in its structure: “when I’m dreaming back like that,” Shem writes, “I begins to see we’re only all telescopes” (295). In Ulysses, wise Bloom also accepts his development to be
nonlinear, his odyssey as much a “vital growth, through convulsions of metamorphosis, from infancy through maturity to decay” (650) as a wavelike movement back and forwards from past to future, future to past:

Ever he would wander, selfcompelled, to the extreme limit of his cometary orbit, beyond the fixed stars and variable suns and telescopic planets, astronomical waifs and strays, to the extreme boundary of space, passing from land to land, among peoples, amid events. Somewhere imperceptibly he would hear and somehow reluctantly, suncompelled, obey the summons of recall. (*ibid.* 17.680)

Bloom, in whom Stephen sees “the accumulation of the past,” learns to “obey the summons of recall,” not only the “predestination of a future” (*ibid.* 17.642) that propels the *Bildung* plot and, by analogy, the organicist narrative of developmental historicism. And, despite Stephen’s will to believe that “the present is living only because it brings forth the future” (*Portrait* 251), he has always sensed that “the stream” of his growth “start[s] forth” but also “return[s] upon itself in dark courses and eddies” (77). Stephen, like Shem and Bloom, is a telescope trying not to see in “the vast cycle of starry life… his own soul going forth to experience” (103).
CHAPTER TWO

INHERITANCE AND ENTROPY IN HOWARDS END, FORSTER’S MENDELIAN BILDUNGSROMAN

I have lately been inclined to speculate, very crudely and indistinctly, that propagation by true fertilisation will turn out to be a sort of mixture, and not true fusion, of two distinct individuals, or rather of innumerable individuals, as each parent has its parents and ancestors. I can understand on no other view the way in which crossed forms go back to so large an extent to ancestral forms.

—Charles Darwin, 1856 letter to T. H. Huxley (qtd. in Mayr 780)

I think if a new race could be born, unbothered by sunsets etc., a new literature might be born, but the spurious clouds of glory still trail round the writer and prevent his either accepting or rejecting the second law of thermodynamics.

—E. M. Forster, Commonplace Book (46)

Early in Howards End, the Wilcox family learns that their matriarch, the late Ruth Wilcox (née Howard), had wished to give her ancestral home to her friend Margaret Schlegel. The family dismisses her request as “treacherous” (97), moving the narrator to wonder: “Is it credible that the possessions of the spirit can be bequeathed at all? Has the soul offspring? A wych-elm tree, a vine, a wisp of hay with dew on it—can passion for such things be transmitted where there is no bond of blood?” (96). These questions touch the novel’s ethical heart; more surprising, they also adumbrate its narrative structure, a series of often implausible events ensuring that Margaret’s line will inherit Howards End. This counterintuitive claim requires a reading of the novel attuned to modern genetics, especially what Forster calls Mendel’s “salutary principle” (Two Cheers 19), which exploded received ideas about individuality, family and progress.

At first glance, a genetic framework—especially one as material as Mendelism—seems unsuited to a novel so dedicated to finding “spiritual heir[s]” (Howards 96). Then again, heredity is undeniably one of Forster’s great themes—“the survival theme,” as Lionel Trilling called it seventy years ago, epitomizing Forster’s “natural or naturalistic piety” (50–51). More specifically, Mendelism offers a way for Forster to retain aspects of
the developmental Bildung plot without assuming its traditional association with progress. Though seeming to favour biological over “soul offspring,” Mendelism helps free the plot of Howards End from the tyranny of time, entropy and genealogy. Thus it sheds much needed light on the novel’s tangled connections and clarifies difficulties that have long bothered Forster critics: those “contrary currents that,” Virginia Woolf observes, “run counter to each other and prevent the book from bearing down upon us and overwhelming us with the authority of a masterpiece” (Essays IV.494).

Woolf anticipates Judith Herz’s influential claim that all Forster’s fiction comprises a “double plot structure” resulting from “the collision” of the overt, heterosexual “surface plot” with a covert, homosexual “under plot” (“Double” 255). Far from indicating artistic sloppiness, as early critics often assumed, the countercurrents emerge as the key manifestation of a sophisticated queer poetics and distinctly modernist sensibility. This double structure, however, is unusually hard to pin down in Howards End, at least in terms of a specifically male homoeroticism. Even when homoerotic configurations are possible, the novel frustrates them; notably, the triangles implicating Leonard Bast and Henry Wilcox are rerouted onto the “safe heterosexual path” (Miracky 50) of male competition for Margaret or Jacky. Yet the novel exhibits the same “discordant creaks in the mechanism of the plot” (Daleski 119) that have long puzzled Forster’s readers, the “discrepancies, disharmonies and disturbing shifts” and “change[s] in mode and convention” (Leavis 264–65) that have energized his reception by queer and postcolonial studies. Though lacking the subtle but evident homoeroticism of The Longest Journey or A Room with a View, Howards End similarly queers the marriage and Bildung plots.
Less amenable to queer interpretation than the other novels, *Howards End* still bears profound formal and thematic affinities with even the overtly homosexual stories of *The Life to Come* (Herz, “Miss Avery” 606–07). Like them, it enacts persistent movement against the current of time, at both ontogenetic and phylogenetic levels—a movement Stephen Da Silva has used, problematically, to differentiate the posthumously published fiction from that published in Forster’s lifetime. A reading attuned to *Howards End*’s complex hereditary structures, however, reveals that here too the favoured characters, by “moving back in time at an ontogenetic level, … also move back in history” (Da Silva 252). This reversion is subtler in *Howards End* than in, say, “The Other Boat,” but not because it fails to criticize the “developmental narrative which can … only see homosexuality as a failed, immature version of heterosexuality” (*ibid.* 241). Instead of ignoring this “heterosexist” narrative (*ibid.* 241), *Howards End* casts its critique wider, tackling a set of structurally similar developmental narratives defined by patriarchy, class, capitalism, imperialism and, of course, heterosexism—all of which participate in what Patricia Tobin calls “the genealogical imperative” (*passim*).

*Howards End* repurposes the surface and under plots of *The Longest Journey* and *Where Angels Fear to Tread* in order to bring together two different kinds of inheritance plots, each invested with its own values but ultimately inadequate if not connected to (which is not to say synthesized with) the other. This perspective moves beyond firm oppositions between heterosexuality, filiation and reproduction on one hand and homosexuality, affiliation and friendship on the other. Forster always questioned these stark oppositions. In “Pornography and Sentimentality” (1920s), for example, he argues

---

43 Homophobia is “knit into the texture of family, gender, age, class, and race relations” (Sedgwick 3–4).
that such artificial dualisms obscure the relations between art’s “two great joys,” “fruition” and “companionship” (Creator 55–56). As “sentimental” and “aesthetic” joys, respectively, fruition and companionship derive from the distinct but practically inextricable “subject matter” and “colour, composition, etc”—that is, form—of the artwork (ibid. 55). The two joys also inflect Forster’s narratological concepts of “story” and “plot,” “pattern” and “rhythm” (Aspects passim), which can be separated only conceptually. Asking whether “passion” for non-material things might “be transmitted where there is no bond of blood” (96), the narrator only seems to favour culture and personal relations over genealogy, which proves crucial to the plot.

I would go further: it is plain (though distasteful to the narrator and to most critics, and thus largely unacknowledged) that Howards End does not allow the transmission of the house or other “such things” until the plot has generated a “bond of blood” through marriage and reproduction. This is not to say that only genealogical connections matter, and we need only consider the hay and hay-fever motifs to see alternative systems of transmission at work. But even these systems rely on the genealogical for their symbolic and ideological value. Thus the novel’s genealogical dynamics, especially procreation, allow for a double plot that is both more tangled and more inclusive than in that of Forster’s other novels. Its structure is both genetic and queer—a paradox only if we overlook how Forster and some contemporaries conceived homosexuality, and how discoveries in biology were then re-inventing human nature.

Notions of character change, and with them notions of development. Woolf famously proposed December 1910 as the moment “human character changed” (Essays III.421). Forster might have pushed this date later, to his fateful visit to Edward Carpenter in 1913,
when he suddenly became aware of his homosexuality (Forster, “Terminal” 217). But in relation to *Howards End* the pertinent character-changing moment would be 1900, when Mendel’s studies on plant breeding were rediscovered, an event that, Ernst Mayr argues, “gave rise in one stroke to an entirely new branch of biological science” (710).

A concern for heredity is among modernism’s most palpable continuities with Naturalism, though of course Naturalist and modernist uses of heredity can differ significantly. Heredity inflects Forster’s treatment of homosexuality, as Maurice attests, but it also offers means for transcending the too stark oppositions between reproduction and sexuality that characterizes much recent Forster scholarship. I wouldn’t claim to find perfect coherence where Miracky finds “contradictions, gaps, and inconsistencies” (26); incoherence is indeed part of the novel’s structural logic. But reading Forster with Mendelism in mind suggests, for *Howards End* at least, an alternative to the notion that of the surface plot and under plot “often one is true, the other a lie. Finally one or the other is displaced” (Herz, “Double” 257). The incoherencies of the novel’s plot are better represented by the Mendelian re-vision of human constitution that Forster would later deploy in order to debunk the myth of racial purity. “There never can be a pure race in the future,” he writes in “Racial Exercise”: “Europe is mongrel for ever” (*Two Cheers* 18). So is the narrative of *Howards End*, which finds the bildungsroman’s traditional enactment of the “nation-soul allegory” (Esty 4) inadequate for dealing with the problem of “who shall inherit England” (Trilling 118). The novel therefore embeds the genre’s individual focus within the hell that is other people; its developmental structure is inextricable from a mongrel system combining individual growth with vertical
(genealogical, filiative) and horizontal (social, erotic, affiliative) relations. The result is a muddled yet fuller model: the nation-souls allegory.

Mendel’s theories challenged many old truths. Among these was the notion of purity, be it the purity of race or the essential oneness and coherence of human selves. Most previous theories saw heredity as a blending process, in which parental essences, forces, memories or particles merged together, forming a new identity out of the old. In blending inheritance, an organism contains its entire ancestry: 50% of its constitution inherited from its two parents, 25% from its four grandparents, 12.5% from its eight great-grandparents, and so on (Fig. 4; cf. Galton’s “ancestral law,” Bulmer 579). Mendelism, by contrast, is non-blending and therefore better explains why heredity can preserve individual differences instead of tending ever closer to an average of parental types. In this model, heredity involves a stream of innumerable atoms (genes) that come together to form a particular individual before separating again, joining with other genes to form its offspring. Particles coding for a certain trait (say eye colour) combine both parental contributions, but the particles themselves retain their identity (Fig. 4). This is why two brown-eyed parents can produce a child with its grandmother’s blue eyes. Unsettlingly, individuals are thus reconceived as “mere fragments in a limitless mosaic” (Scheinfeld vii). Such genetic thinking is most explicit in Forster’s anti-Nazi broadcasts of 1939, but it is already there in the novels he wrote between 1905 and 1913.

This chapter proposes a new look at Forster’s modernism, one which couples, rather than contrasts, queer interpretations with the genetic concerns that saturate his novels. Nowhere is this coupling more productive than in Howards End. The novel’s plot, informed by principles of Mendelian inheritance, enacts, naturalizes and even celebrates
This chapter proposes a new look at Forster's modernism, one which couples, rather 
reversion (as I call atavism viewed as a positive); genetics thus participate directly in the 
novel's “narrative inversion,” as Scott Nelson calls the queer poetics of Forster, John 
Addington Symonds and Edward Carpenter (311). In recapitulation theory, as I noted in 
the Introduction, reversion is necessarily pathological, a failure or regression in 
development. But Mendelism invalidates such a facile view. As Stephen Jay Gould 
argues, recapitulation “died primarily because Mendelian genetics … rendered its 
premises untenable”; Mendelism debunked the recapitulatory narrative that assumes that 
“evolution proceed[s] only by an addition of new stages to the end of ancestral 
ontogenies. But if new features are controlled by genes, and these genes must be present.
from the very moment of conception, then why shouldn’t new features be expressed at any stage of embryonic development or later growth?” (Gould, *Panda* 246). A corollary of this new paradigm is that what recapitulation reduced to developmental failure could now be conceived less negatively.\(^{44}\)

Reclaiming reversion would have vindicated Forster’s personal and political struggles against imperialism, heterosexism and class inequity, for recapitulation theory had long served to classify non-whites, homosexuals and the poor as undeveloped (Gould, *Ontogeny* 115–66). The reclaiming has an additional benefit for *Howards End*: it offers a means of confounding the entropy that bedevils the narratives about processes like blending inheritance, *Bildung*, recapitulation, developmental historicism and what Lee Edelman calls “reproductive futurism” (2). In short, I think queer interpretations of Forster should be revised to accommodate his positive concern for genealogical processes: marriage, death and procreation—especially procreation, a biological process to which *Howards End* is remarkably committed in its model of connection.\(^{45}\)

My argument follows, to a point, Leslie White’s deft critique of the view that *Howards End* closes on a note of harmonious synthesis. I agree that the ending “favors not a marriage but a salutary disconnection of disparate sensibilities” (White 44), but by reframing this conclusion in Mendelian terms, I am able to provide a new and more nuanced model of how the novel endorses Margaret’s mantra, “only connect” (*Howards* 183). This model avoids both the synthesis implied by connection, but also the separation implied by “disconnection” (White 43). The genetic framework shows how the novel

\(^{44}\) In *The Gender of Modernity*, Felski finds a similar strategy among early-twentieth-century feminists, who appropriated and subverted “mythologies of progress and degeneration” and re-interpreted the notion of “decline into a sign of advancement to a higher condition” (149).

\(^{45}\) Six babies are born in the narrative, and though only one (Helen and Leonard’s) affects the plot, the other five reinforce the procreative theme (see Fig. 5a, below).
takes on the Bildung plot, muddying its ontogenetic focus with the spectre of heredity and phylogeny both past and future. Howards End is thus a distinctly modernist bildungsroman, which explodes the genre’s traditional linearity and progressivism by revealing “the chaotic nature of our daily life, and its difference from the orderly sequence that has been fabricated by historians” (Howards 104).

Procreation and the Genealogical Bildungsroman

“Inheritances,” writes Allan Hepburn, “change destinies and instigate stories” (3). Few novels better exemplify this claim than Howards End, whose plot is launched by the (unfulfilled) promise of Helen’s marriage to Paul Wilcox; complicated by Ruth Wilcox’s death and unsettling legacy to Margaret; partially resolved by Margaret’s marriage to Henry Wilcox; brought to its crisis by the conception of Helen’s son and Leonard’s death; and resolved when Mr. Wilcox makes Margaret and the baby legal heirs to the house. Howards End is therefore close kin to “the genealogical novel,” identified as “a new genre” by A. E. Zucker, in 1928. Invented independently by Zola and Samuel Butler, the genealogical novel reflects new notions of family and genealogy brought about by “the new interest aroused in the doctrine of heredity” (Zucker 551). Though Howards End is not quite a genealogical novel in Zucker’s sense, it shares the genre’s thematic concerns with family and inheritance, which, revised according to modern scientific theories, radically deform traditional family plots. Like the genealogical novel, it also assigns a particularly important role to procreation.

It is Helen’s affair and baby that brings Howards End to its crisis. The baby provokes a social crisis, for it offends the sensibilities of the Wilcoxes. It also produces the novel’s
crisis of generic identity. What had previously been the plot of individual characters developing and growth through social interaction becomes, with the birth, an inter-generational plot. To put it in more general terms, procreation breaks the correspondence between story and protagonist(s), story-time and character development; and to this point the novel had led us to expect this correspondence. The baby disrupts the self-fulfillment plot concentrated primarily on Margaret and Leonard (which would traditionally have found closure in the equilibria of marriage and death, respectively) and produces an open-ended plot of genealogical continuity.

For reproduction sits uneasily in a developmental plot. One birth suffices to challenge, as Gillian Beer says of Darwin’s theory of descent, “the single life span as a sufficient model for understanding experience” (Darwin 11). A bildungsroman like The Longest Journey differs radically from A Portrait of the Artist: while Joyce treats solely ontogenetic development, Rickie’s ontogeny is woven into a longer genealogical story beginning with his parents’ courtship and ending, in a sense, with his ill-fated daughter’s birth. The Longest Journey is thus one of the modernist bildungsromans that Castle describes as “ensemble narratives in which Bildung plots are embedded and thereby re- or decontextualized by a larger narrative structure that contains them” (192). Straddling three generations, The Longest Journey doesn’t cohere around one protagonist, so it is fitting that Rickie finds artistic fulfilment only in death, when it can be enjoyed by his heirs: his brother Stephen and niece.46 In Howards End, similarly, the focus on Margaret’s “growth” (275) and “Leonard’s development” (313) is displaced by the baby.

46 Forster’s frequent recourse to sacrificial characters (like Leonard Bast, Rickie Elliott and Gino’s son) is unsettling but impossible to ignore as a crucial aspect of his plots.
How, then, is *Howards End* a bildungsroman? The answer isn’t obvious, especially given my own definition—a novel charting the growth of a central character from infancy or childhood to maturity. Margaret and Leonard are adults when the story begins, and though the novel traces their development—Margaret gains “rudimentary control over her own growth” (275), while Leonard fails “to acquire culture” (37)—the change is moral and social, not ontogenetic. Reading *Howards End* as an intergenerational (phylogenetic) plot, as I have just encouraged, would seem to preclude reading it as a developmental (ontogenetic) bildungsroman.

But *Howards End* is a bildungsroman *because* of its genealogical plot. There is, of course, much overlap between the novel of formation and the family saga; witness *Sons and Lovers* or, more recently, *Midnight’s Children* and *White Teeth*. For Bakhtin, the overlap is an essential quality of the modern “biographical novel,” as opposed to older genres like the adventure novel:

> Biographical life is impossible outside the larger epoch, which goes beyond the limits of a single life, whose duration is represented primarily by *generations*. There is no place for generations in the novel of travel or the novel of ordeal. Generations introduce a completely new and extremely significant aspect into the depicted world; they introduce the contiguity of lives taking place at various times. *(Speech 18, original emphasis)*

All biographical novels “embryonically” conceal the hero’s parentage (*ibid.* 18), though some, like *Sons and Lovers*, actually showcase this “prehistory of Bildung” (*Castle* 105). In *Howards End*, however, this prehistoric extension of *Bildung* is so emphatically foregrounded that the *Bildung* plot becomes eclipsed. Neither Margaret nor Leonard
undergoes the sort of development needed for a *Bildung* plot. But if we follow their developmental plot beyond their lives through to Helen’s baby, the necessary ontogenetic arc is there after all. As unlikely as this solution may seem, it fits the contemporary tendency to blur “the distinction between ontogeny … and phylogeny,” which Gillian Beer calls “one of the most fruitful disturbances of meaning” in post-Darwinian literature (*Darwin* 12). Instead of self-realization coming with maturity, then, we have what Gavin de Beer calls “phylogenetic rejuvenation” (94)—self-realization once removed. Self-realization comes instead when maturity moves to infancy in the next generation, a rather drastic reversal of the traditional *Bildung* plot.

We know from *Aspects of the Novel* that “birth” (36) is a theoretical concern, as well as a theme and structural device, in Forster’s fiction. *Where Angels Fear to Tread, The Longest Journey, A Passage to India* and *Howards End* all feature or at least anticipate the arrival of babies. Their conception, birth and death are what Kafalenos calls A-functions—destabilising events that are necessary for initiating any narrative sequence (7). As unusual as they are in modernist fiction, Forster’s procreative plots have been overlooked or dismissed; Arthur Martland is nearly alone in recognizing that “procreation… was an important issue” for Forster (20). For most critics, reproduction is associated with the heterosexism Forster attacks through his under plots. Charu Malik finds that Forster’s novels “struggle for heirs of same-sex lovers who would inherit the earth, inherit England” (230), while John Beer suggests “homosexuality gave [Forster] an

---

47 *Ulysses* is another such novel: Bloom’s meeting with Stephen is enabled by the birth of Mrs. Purefoy’s baby. But aside from family sagas like *The Rainbow* and *The Making of Americans*, which by definition use birth as plot events, modernist novels tend to relegate it to the sidelines. In *To the Lighthouse*, Prue’s death “in some illness connected with childbirth” (*Three Great* 365) has no plot consequence; the birth of Orlando’s son (295), similarly, is disconnected from the events which precede and follow it.
'outsider’s’ view of things, making him look at the world from a point of view which did not regard marriage or the procreation of children as central” (qtd. in Martland 20).

These claims neglect how often procreation punctuates Forster’s novels and how much it contributes to their under plot. His genealogical plots refuse straightforward oppositions between homosexuality and reproduction. If, as Robert Martin argues, Forster’s fiction seeks to “deal with the problem of continuity without physical begetting” (257), we shouldn’t forget that his fiction does also feature a lot physical begetting. In this they mirror the philosophy of Edward Carpenter, which Gregory Bredeck characterizes as “nonheterosexual evolutionary democracy” (32), and which chimed so well with Forster. Carpenter saw homosexuals as mediators of human reproduction and evolution. True, “homogenic love” is “non-child-bearing love” (Intermediate 37), whose “special function is … the generation—not of bodily children—but of those children of the mind” (ibid. 69–70); but the “intermediate” vantage of “Uranians” also enables them to reconcile males and females, who would otherwise “drift into far latitudes and absolutely cease to understand each other” (ibid. 17), and therefore to ensure humanity’s survival.48

Forster similarly deconstructs the myth of homosexual sterility, in both negative form (i.e., as deviance from a biological necessity) and positive form (i.e., as a protest against and escape from compulsory heterosexuality). The scandalous, though heterosexual, unions of Lilia and Gino, Mrs. Elliot and Robert and Helen and Leonard are more like Maurice and Alec Scudder’s same-sex, cross-class love than Charles and Dolly Wilcox’s

48 Leonard Bast, as I will show, plays exactly this mediatory role between the diverging Wilcox and Schlegel families; Forster’s enactment of this dynamic inverts Carpenter’s however, for in Howards End it is the reproductive function that brings together two sensibilities which the novel codes as non-reproductive and non-biological (i.e., the Schlegels are associated with culture and idealism, the Wilcoxes with tradition and “the sneaking belief that bodily passion is bad” (Howards 183).
bourgeois marriage. These transgressive heterosexual unions also merge inextricably
with the underplots of *Where Angels Fear to Tread*, *The Longest Journey* and *Howards
End*, because their fertility directly influences the novels’ queer dynamics. Gino can thus
inhabit a homoerotic social space but also fulfill “his one desire” to “become the father of
a man like himself” (52). So much depends on his “divine hope of immortality: ‘I
continue’” (52). Without it, his son’s death would be less tragic, and tragedy is needed to
spark Gino and Philip’s homoerotic bond. Gino is a Forsterian ideal, the rare man “who
comprehends that physical *and* spiritual life may stream out of him for ever” (109, my
emphasis). Gino embodies a meeting place of blood and spirit, and the genealogical links
created by his procreation provide a substrate for other kinds of non-reproductive
connections, which also play a major role in the plot of *Howards End*. The familial
dynamics of birth, marriage, procreation and death provide the bulk of the plot’s
constituent events, but a fuller picture emerges once we see how the genealogies canalize
the flow of money, property, gifts, ideas and, textually, verbal echoes and motifs. For the
purposes of this chapter, however, I focus on the novel’s various conflicting genealogical
structures, whose interactions produce a plot byzantine and interesting enough without
the additional non-genetic complexities (but see Fig. 5b). The epigenealogical should
always be kept in mind, of course, for they are central to Forster’s ethics and aesthetics
alike; but the genealogies tell a fascinating story of their own. Ultimately, as we’ll see,
the major conflict is not between biology and culture, but between two views of filiation,
one of which, favoured by Forster, actually produces or collaborates with affiliation.
Mendelism: “Colour … in the Daily Gray”

Drawing heavily on genealogy, *Howards End* is able to connect characters who seem constitutionally incompatible. The meetings and matings between the Wilcoxes, Schlegels and Basts often leave readers shaking their heads, especially the two unions most important to the plot: Margaret’s marriage to Henry and Helen’s impregnation by Leonard. The novel’s resolution, which finds the Schlegel sisters, Mr. Wilcox and the baby happily or at least resignedly housed at Howards End, has similarly been deemed too pat, too tenuous or too triumphant.

Though I agree to some extent with these judgments, I think they are fixated on ideal unions and resolutions that *Howards End* simply does not attempt—indeed, ideals it specifically resists. The novel ends not by trumpeting union but by stressing difference in connection. Rather than “the anodyne of muddledom, by which most men blur and blend their mistakes” (315), the novel, through Margaret, enacts a “battle against sameness. Differences—eternal differences, planted by God in a single family, so that there may always be colour; sorrow perhaps, but colour in the daily gray” (336). The danger of “the daily gray” is the danger of entropic sameness, of blending towards the indistinct, the average, the general.

Entropy is the dissipation of energy (spiritual or physical); the dissolution of affections; the blending of differences. It is anathema to Forster’s politics and aesthetics. In “What I Believe,” for instance, he says he distrusts “Great Men” because “they produce a desert of uniformity” (*Two Cheers* 70); in an early essay on Dryden, he deplores how Milton’s successors turn Milton’s “world of divine purity … into a world of murky grey” (*Creator* 142); and in his poem “Incurious at the Window” a regiment of
identical soldiers betoken “death’s universal grey” (*ibid.* 730). In *Howards End*, the “universal gray” (125) is a constant threat, the result of homogenizing forces like capitalism, imperialism, typology, and the genealogical imperative to “breed like rabbits” (271). Against these forces, Forster upholds the “differences … planted by God in a single family, so that there may always be colour” (336). He does this partly by contrasting the traditional, patriarchal and progressivist model of filiation with an alternative, but equally genealogical, model. This alternative model derives its power to elude the “universal gray” from its adaptation of a peculiar, non-blending form of inheritance—which happens to be a primary distinction of Mendelism and the basis for Forster’s later attacks on racial purity.

Mendel published his famous breeding experiments on peas in 1866, but his theories of atomistic, non-blending inheritance were almost totally ignored before their rediscovery, in 1900, by German and Dutch biologists. Soon, Mendel found British champions in Bateson and Reginald Punnett, who together would launch *The Journal of Genetics* in November 1910 (“Volume 1”). A thorough history of Mendelism being beyond the scope of this chapter, suffice it to say that it challenged, if not demolished, many cherished notions of individuality and genealogy, ontogeny and phylogeny. Its novelty stemmed mainly, as Bateson writes in “Heredity in Modern Lights” (1909), from the fact “that the characters of living things are dependent on the presence of definite element or factors, which are treated as units in the process of Heredity. These factors can thus be recombined in various ways” (*Naturalist* 223). Thus “the difficulty of the ‘swamping effects of intercrossing’ [i.e., averaging by blending] is practically at an end” (*ibid.* 223). Margaret, who finds such “comfort” in “eternal differences” (*Howards* 336),
might be cheered by Bateson’s claim that thanks to Mendel “we now understand the process by which a polymorphic race maintains its polymorphism” (Naturalist 223).

Mendelism helps account for Howards End’s battle against entropy, but it also plays into the novel’s radical reinterpretation of the Bildung plot by redefining what constitutes an individual. In his popular book Mendelism (1905), Punnett portrays “the individual” not as the self-contained whole of traditional humanism, but as “an aggregate of unit-characters”; “individuality,” he adds, is merely “the expression of a particular aggregation of such characters” (74). This paradigm shift implies an entirely new way to conceive of individual development:

The facts of heredity provide us with a series of reactions, which, if read aright, reveal to us the constitution of the living thing. And in the constitution of the living thing we have the key to its behaviour, to its potentialities and limitations, to what it can become and what it can produce. (75)

Though Punnett flirts with hubris, he is right to see in Mendel’s re-vision of individual “constitution” new ways to imagine the unfolding of “potentialities”—the Bildung plot.

If individuals are just aggregations of hereditary units that can be combined and recombined in innumerable arrangements, there is no genetic reason to prioritize the self-consistency of an individual organism during its lifetime over the continuity of an individual gene across generations. Applied to the bildungsroman, this would suggest that a developmental plot need not be limited to following an individual’s growth from childhood to adulthood; it might instead follow the genes from mature individual to infant kin.49 The hero’s self-realization may therefore lie in the next generation. This is

49 The mode of inheritance need not be biological: transmission might also involve non-biological influences—as in the rhythmic connections linking Mrs. Moore, Aziz and Godbole in A Passage to India.
exactly Rickie’s perspective in *The Longest Journey*: “unfitted in body” and “unfitted in soul” (81), he predicts his own self-realization completed in other bodies that share his blood—his half-brother Stephen and Stephen’s future children.

In *The Longest Journey*, then, Bildung involves “handing the torches on” (376) as much as achieving personal growth. In *Howards End*, which is invested in the same onto-phylogenetic dynamics, though it is less clearly a bildungsroman, organic development can likewise “overleap one grave” (Forster, *Longest* 258). In other words, development breaches the bounds of ontogeny to become phylogenetic, suggesting the bifurcation of a life into separate ontogenetic and phylogenetic paths. This view clarifies how *Howards End* simultaneously negotiates both Bildung and genealogical plots.

We’ve already encountered the notion that organisms embody separate developmental and evolutionary fates, which is implied by Temple’s cryptic claim about “the law of heredity” in *A Portrait* (see page 81): “The most profound sentence ever written,” he says, “is the sentence at the end of the zoology. Reproduction is the beginning of death” (230–31). This is the very “sentence” imposed on Leonard in *Howards End*. What’s at stake here is not the age-old theory that reproduction kills by sapping vital energy (Weismann, *Essays* 132) but, rather, the more nuanced, Neo-Darwinian view proposed by August Weismann, a view that brings us closer to the plot mechanics of *Howards End*. For Weismann, death is correlated with reproduction, but the correlation is not inevitable: it merely stems from historical contingencies that had made—but need not make—“the duration of life beyond the reproductive period” disadvantageous (*ibid* 155).

This idea of programmed death is pertinent to *Howards End* because its larger theoretical foundations illuminate how much Leonard’s death participates in the novel’s
structure and ideals. Weismann’s major lasting contribution to biology was to partition organisms into germ (sex cells) and soma (the rest of the body), a fragmentation of the individual which has everything to do with “the law of heredity” (Weismann, Essays 28). “Unicellular organisms” don’t die, argues Weismann, “because the reproductive cell and the individual are one and the same.” But in multicellular organisms, individuality and sexuality undergo a “division of labour” (ibid. 112): “Here also reproduction takes place by means of cell-division, but every cell does not possess the power of reproducing the whole organism. … The immortality of the unicellular organism has only passed over to the former; the others must die” (ibid. 111). Unicellular organisms live or die in either “perfect integrity or complete destruction (ibid. 27), but complex organisms are, as Gillian Beer puts it, “both a vehicle and a dead end” (Darwin 38). Weismann’s germ-soma division can be interpreted in many ways, some ideologically rather suspect. For Forster, the division serves to shift the narrative focus from the protagonists as whole beings in a Bildung plot onto fragments of the protagonists in a genealogical plot.

For his specific purpose in Howards End, however, Forster requires a further refinement of the germ-soma division, which Mendelism provides. In Mendelism, not only are germ and soma divided, the germ itself is composed of innumerable particles, each with its own path: each gene in the germ can move independently from other genes. As Eder lucidly explains in his 1909 review in The New Age,

each germ cell is unique in regard to a large number of characters, called a unit character, and these unit characters are transmitted intact to the next generation.

One dubious use of the germ-soma division is the view that individual death can be mitigated by genetic survival, as in the comfort offered by Scorsese’s The Departed. The film seems to defy its genre (the crime thriller) by abruptly killing off its hero Costigan, just as he has captured his nemesis Sullivan. But this subversion is largely nullified by phylogenetic compensation for Costigan’s truncated ontogeny: we know he cuckolded Sullivan and (it’s implied) impregnated Sullivan’s girlfriend with his genetic continuance.
Tall and short do not give rise to an average kind of family; the children are exactly like one parent or the other in this respect. (Eder 192, my emphasis)

The resulting model of heredity, less constrained by the irrevocability of genetic blending, lends itself to the possibility of time-reversible inheritance. This is a far cry from blending inheritance, whose temporal orientation is inexorably forward-moving, irreversible as the mixing of paint colours. Blending inheritance is therefore congenial with recapitulation’s progressivism but also reveals its entropic underside: with every blending, the paint tends closer to “universal gray” (Howards 125). For this reason Darwin, who couldn’t quite imagine a non-blending alternative, struggled to explain how heredity could produce novelty instead of homogeneity (Ruse 210–12).

This difficulty largely disappears with Mendelism. Though its genetic mechanism is conservative (the “unit characters are transmitted intact”), the conservatism paradoxically enables the creation of almost infinite novelty because individual “factors” (genes) “behave as independent entities during the hereditary process” (Punnett 75). That is, they can be combined in all sorts of ways without being watered down by averaging. Dawkins puts it well: Mendelian inheritance “is not like blending paints, it is more like shuffling and reshuffling cards in a pack…. Genes don’t blend; they shuffle” (Greatest 29). And when many such shuffling genes are considered together, Eder observes, “complications ensue …, for the child may be exactly like one parent in one unit character, say size, and exactly like the other parent in another unit character, say form” (192); because each individual is made up of literally thousands of “unit characters,” the number of possible

---

51 The simultaneously progressive and entropic narrative of blending inheritance recalls Zeno’s paradox (in which forward movement over a repeatedly divided length of space between A and B, can never reach B) and bids us to consider Bergson’s solution to the paradox: distinguishing time as a spatial, mathematical construct from time as indivisible durée (Pensée 158ff).
configurations is practically infinite. In this view, an individual is literally a mosaic; and, as Goudge argues, the mosaic model does seem to make biological evolution less vulnerable to the tyranny of irreversible time and entropy (170–72).

The Mendelian challenge to crude progressivism is adumbrated in a 1902 anti-eugenics polemic by H. G. Wells. Current (pre-Mendelian) genetics, Wells argues, can’t cope with the complex characters (“‘ability,’ ‘capacity,’ ‘genius,’ and ‘energy’” [“Mankind” 707]) that eugenicists hope to propagate. For dealing with the inheritance of “beauty,” which Wells calls “a miscellany of synthetic results compounded of diverse elements in diverse proportions” (709), “there is no science yet, worthy of the name” (711). Here Wells inserts a footnote linking what such a science would require (viz. “defin[ing] the elements in inheritance”) to “the very striking researches of the Abbé Mendel” (711). The mention of Mendel is remarkable for its up-to-dateness (Bateson had only just introduced him to an English public in 1902), but also because it serves Wells in his assault on eugenics. Without mentioning Mendel, he unmistakably approximates Mendelian logic and shorthand: if “human appearance” were made up of certain elements, a, b, c, d, e, f, etc., then we might suppose that beauty in one case was attained by a certain high development of a and f, in another by a certain fineness of c and d, in another by a delightfully subtle ratio of f and b.

A, b, c, d, e, F, etc.
a, b, c, d, e, f, etc.
a, b, c, d, e, F, etc.,
might all for example represent different types of beauty. Beauty is neither a simple thing nor a constant thing, it is attainable through a variety of combinations. (708)
Though not scientifically rigorous, this model exploits, like Mendelism, the enormous range of possibilities generated from a few independently-combining “elements.” Unexpectedness is implicit in Wells’s model as in Mendel’s: beauty composed of $A$–$F$ together may well vanish in the next generation if $A$ is partnered with $f$ or $a$ with $F$; conversely, the beautiful $c$–$d$ combination may unexpectedly arise from the crossing of two unprepossessing parents ($c$–$D$ crossed with $C$–$d$). Though Mendelism is certainly not incompatible with evolutionary progressivism (as history shows us), the multivariate possibilities and contingencies involved make it less hospitable to straightforward notions of generation-to-generation improvement.

A focus on Mendelian inheritance brings out hidden complexities in Howards End’s famous idealization of connection—which is not blending. “Only connect!” (183) is not a call for union or synthesis; it calls for the coexistence of differences as differences. As Margaret conceives it, it is

the building of the rainbow bridge that should connect the prose in us with the passion. Without it we are meaningless fragments, half monks, half beasts, unconnected fragments that have never joined into the man. With it love is born, and alights on the highest curve, glowing against the gray. (183).

Margaret’s vision of the divided self and its possible wholeness is a microcosm for the novel’s complicated plot lines and genealogies. Unconnected differences give only “meaningless fragments,” but blended differences produce an equally meaningless “gray.” The “rainbow bridge” is an apt ideal, allowing connection (the bridge) to coexist with difference (the discrete colours of the light spectrum).
Reading Howards End as a bildungsroman concerned with individual development, the difference between blending and non-blending attains a remarkable importance. It is, indeed, in the context of Mr. Wilcox’s development that Margaret rehearses her famous call for connection. Finding her husband incomplete, she puts her faith in his inherent ability for self-cultivation, for Bildung: “she would only point out the salvation that was latent in his own soul, and in the soul of every man” (183). The problem, as she sees it, is that in his “soul” nothing is distinct, “all had reverted to chaos” (183), and her failure to help him stems from his blindness to detail and difference: “he never noticed the lights and shades that exist in the grayest conversation, the finger-posts, the milestones, the collisions, the illimitable views” (184). In Helen’s equivalent mission of helping the Basts, she senses that giving Leonard, whose life “was a gray life” (120), enough money merely to stay afloat will only “mak[e] the gray more gray” (251).

These and many other allusions to the entropic empire of gray mark Howards End’s developmental narrative as a struggle to resolve conflicts without solving them—to connect without blending the colours of “the rainbow bridge” (183). Seen in this way, the story of the Schlegels has to be coupled with the stories of the other families. The coupling is necessary, as the narrator comments: “the world would be a gray, bloodless place were it entirely composed of Miss Schlegels” (25–26). And if the final reunion of the Schlegel, Bast, Wilcox and Howard families seems strained, the strain would appear to be consistent with the novel’s Mendelian understanding of connection.

Daleski complains that the “late appearance of a rainbow in the daily gray is novelistic legerdemain” (125), but closer inspection reveals the logical and structural inevitability of Forster’s metaphor, for it follows from his putting genealogy and Mendelism in
service of a modified *Bildung* plot. In the closest contact between Margaret and Leonard, the primary foci of the novel’s developmental plot, Margaret distills self-cultivation into an anti-entropic, anti-blending terms: “Haven’t we all to struggle against life’s daily grayness” (140)? Leonard’s struggle “to acquire culture” (37) is similarly presented as an effort to “push his head out of the gray waters and see the universe. He believed in sudden conversion, a belief which may be right, but which is peculiarly attractive to a half-baked mind” (47). Leonard’s ambition, as I have mentioned, can’t be realized in his lifetime; hope lies instead in the right genetic connections.

What *Howards End* suggests, then, is a form of *Bildung* very different from the individualistic striving characterized by Stephen in *A Portrait of the Artist*. It is a social, and a genealogical process. When Margaret defends Leonard’s potential, even as she admits he fails to attain it, she speaks to the role of interpersonal connection (both social and biological) and the importance of Howards End as a physical place and spiritual home: “either some very dear person or some very dear place seems necessary to relieve life’s daily gray, and to show that it is gray. If possible, one should have both” (142). Margaret does not specify what makes a person “very dear,” though her sister Helen is the referent here; and companionship, friendship and other such horizontal personal relations are of course eligible (especially given the bond between her and the first Mrs. Wilcox). But insofar as Forster charts the realization of potential, it is through vertical, intergenerational relations. If the plot’s end—terminus and objective—is to find an appropriate heir to Howards End, its trajectory must extend beyond the bounds of the individual life, breaching the limits of Margaret’s and, especially, Leonard’s ontogenies and resolving itself in Helen’s baby. Thus *Howards End*, like a good modernist
bildungsroman, fulfills its Bildung plot by abandoning one of the genre’s defining features: the correlation of plot development and character development.

The Schlegel sisters’ basic plot function is to channel the ownership of the titular house from the Wilcoxes, who gained it through marriage, to the son of Leonard Bast—who has, as Margaret senses, always been “looking for a real home” (140). It is a tortuously indirect channel, designed ultimately to return the house to an earthy “aristocracy” (19) embodied by Ruth Wilcox and Miss Avery but also latent, genetically, in Leonard. In other words, Howards End is a genealogical drama designed to restore Howards End to its original yeoman stock. It is also a bildungsroman: the “nobler stock” (320), produced by reversion, is presented as a phylogenetic extension of Leonard’s and Margaret’s various forms of arrested development.

Leonard can’t be the heir himself. As “colourless, toneless” as his own gray life, he is viewed (the passage is focalized through Margaret) as the victim of genealogical entropy or, as his contemporaries might have said, degeneration:

One guessed him as the third generation, grandson to the shepherd or ploughboy whom civilization had sucked into the town; as one of the thousands who have lost the life of the body and failed to reach the life of the spirit. Hints of robustness survived in him, more than a hint of primitive good looks, and Margaret, noting the spine that might have been straight, and the chest that might have broadened, wondered whether it paid to give up the glory of the animal for a tail coat and a couple of ideas. (113)

To Mr. Wilcox, Leonard is unfitness incarnate (188), and Leonard’s death appears to confirm Henry’s Social Darwinian view that when “the shoe pinch[es]” (189) the weak
fall in order to ensure “the survival of the fittest” (187). Leonard does cut a sorry figure. His charms are relics, ancestral rather than actual. Yet for all his individual failure, the traces of “robustness,” “primitive good looks” and “glory” promise a future that is pointedly denied to Wilcox posterity.

The narrator is explicit about Leonard’s reproductive potential. When he travels to Howards End and to his death at the end of the novel, he finds himself far from the “the gray tides of London” (106), among his ancestral folk: “They are England’s hope,” the narrator avers. “Clumsily they carry forward the torch of the sun, until such time as the nation sees fit to take it up. Half clodhopper, half board-school prig, they can still throw back to a nobler stock, and breed yeomen” (320, my emphasis). The ability to “throw back to a nobler stock” shows Howards End at its most Mendelian. Nearly thirty years later, in “Racial Exercise,” he would praise Mendel for showing scientifically how peas, like people, “keep throwing up recessive characteristics” (Two Cheers 19), as if they resurrect the past. There is something undeniably conservative about Forster’s ideal of “a nobler stock,” but it is so profoundly inflected by “narrative inversion” (Nelson 311)—a queering Forster tends to enact through homoeroticism, paganism and fantasy—that conservatism hardly seems the right word. In Arctic Summer, for instance, “Mendelism” is invoked to explain Clesant March’s uncanny resemblance to a blond soldier in a sixteenth-century fresco—an ancestor, it turns out (148); but only Martin Whitby, an older man drawn to Clesant, sees the resemblance. Thus Forster incorporates Mendelism into his quasi-mystical and definitely homoerotic plot dynamics. Indeed, the image of “carry[ing] forward the torch of the sun”—that old but reliable pun—is a Forsterian

---

52 It is Leonard’s quasi-atavistic contact with the land rather than his theories that prompts Margaret to call him “a real man” (144), a comment with major repercussions for the plot: it sparks Mr. Wilcox’s jealousy and, as Margaret herself attests (170), eventually leads to their marriage.
favourite, recurring in an early draft of *The Longest Journey* (376) and in *Maurice* (78), the two novels in which homosexuality and reproduction are most complexly entwined.

Leonard’s view of the labourers is counterpointed by the passing of an automobile, whose occupant

was another type, whom Nature favours—the Imperial. Healthy, *ever in motion*, it hopes to inherit the earth. *It breeds as quickly as the yeoman, and as soundly;* strong is the temptation to acclaim it as a super-yeoman, who carries his country’s virtue overseas. But the Imperialist is not what he thinks or seems. He is a destroyer. He prepares the way for cosmopolitanism, and though his ambitions may be fulfilled, *the earth that he inherits will be gray.* (320, my emphases)

Together, the two foregoing passages debunk any claim that Forster rejects procreation in favour of non-reproductive affiliations. To be sure, the unappealing Imperial type, apparent winner in the “battle of life” (187), is marked by his ability to breed—to “breed like rabbits,” as Miss Avery mocks the Wilcoxes (271). But fertility itself is not what differentiates the Imperial from the yeoman who, indeed, “breeds as quickly …, and as soundly.” The contrast between the types is more complicated than the dichotomy of filiation and affiliation allows: it rests not on the contest between genealogy and other forms of bonding but, rather, on a distinction between different reproductive narratives.

Moving ever forward, the Imperial colonizes the earth but breeds entropy; following “the tendency of civilization … upward” (188), his imperialistic mission is just another form of the misguided, dehumanized philanthropy from which Margaret shrinks, “the many-coloured efforts thereto spreading over the vast area like films and resulting in a universal gray” (125). By contrast the labourers, though not “men of the finest type”
can potentially counter progress’s irreversible (i.e., entropy) by “throw[ing] back to a nobler stock” (320).

The genealogical structure of *Howards End* is therefore deeply invested in Mendelism, which offered a simple and benign account of throwbacks, or atavisms. The labourer’s potential reversion to yeoman stock is the novel’s strongest evidence for a Mendelian framework, but there is at least one more intriguing clue. It is concealed in the humorous description of a central if overlooked character, one whose indispensability to the plot seems willfully divorced from her developmental or reproductive potential. “Awesome” in her dishevelment, Jacky is a veritable aggregation of fragments: “all strings and bell-pulls—ribbons, chains, bead necklaces that clinked and caught—and a boa of azure feathers hung round her neck, with the ends uneven” (48). The narrator continues with a strangely evocative description of her hat:

her hat, which was flowery, resembled those punnets, covered with flannel, which we sowed with mustard and cress in our childhood, and which germinated here yes, and there no…. As for her hair, or rather hairs, they are too complicated to describe, but one system went down her back, lying in a thick pad there, while another, created for a lighter destiny, rippled around her forehead. (48)

Does Forster pun on “punnets” and Punnett? It seems far-fetched, but then Jacky’s hat so strongly hints at the novel’s concern with reproductive success (some seeds germinate, others no). And the portrait of her “hairs” mirrors the fluvial imagery that provides a thematic counterpart to the novel’s structural use of genealogy and inheritance. The hairs, indeed, are a microcosm of the novel’s elaborate “system” of hereditary streams. Finally,

53 The narrator intrudes elsewhere in the novel, but only here does hint at an existence separate from his role as narrator (he had a childhood) and only here does he implicate us as participants and not merely spectators or judges (it was also “our childhood”).
Jacky most poignantly embodies the anti-\textit{Bildung} plot that \textit{Howards End} combines, tenuously and sometimes awkwardly, with its \textit{Bildung} plot. “On the shelf” (49), she is the novel’s most pathetic victim of developmental entropy: she is, indeed, “descending quicker than most women into the colourless years” (48).

Showing Jacky “past her prime” (48), the narrator offers a microcosm of \textit{Howards End}’s structure, the structure of a bildungsroman straddling ontogenetic and phylogenetic plots. A similar moment occurs near the novel’s end, when Margaret disputes Helen’s admission of developmental failure (an implicit identification with Jacky). Helen claims that because she will “never marry,” she is “ended” (335)—here also echoing Mr. Wilcox (“I’m ended” [331]). But Margaret takes a larger view of development:

Don’t fret yourself, Helen. Develop what you have; love your child. I do not love children. I am thankful to have none. I can play with their beauty and charm, but that is all—nothing real, not one scrap of what there ought to be. And others—others go farther still, and move outside humanity altogether. A place, as well as a person, may catch the glow. Don’t you see that all this leads to comfort in the end? (335–36)

This is exactly what Margaret has found: “a dear person” (Helen) and a “very dear place” (\textit{Howards End}). But bringing the people and place together is a complicated business, given the characters’ initial social and interpersonal configurations, and it requires combining various kinds of genealogies and even supplementing them with non-biological modes of inheritance. The resulting tangle, ultimately, produces a plot that returns the house to its rightful heir, or rather heirs.
**Howards End’s Genealogical Plot and Narrative Entropy**

The plot of *Howards End* is quite literally a group of interconnected family trees (Fig. 5a). For family trees are plots:\footnote{Narrative theory has long, at least since Zola, been linked with family structure. Family is a fruitful subject for studies of novel structure, partly because of its ubiquity and partly because it clearly implicates both theme and form. “The family plot,” writes Kilroy, is “built upon human concerns so primal as to serve as a template for the narrative plot” (5); and Moreiras claims “inheritance and legacy” as elements of writing in general (64). Tobin links genealogical structures and the structure of narrative (and also syntax, and thought). Joseph Boone argues that familial themes help us decode the process by which ideology becomes literary form. The most successful theories consider the pragmatic dimensions involved in literary treatments of family; see esp. Jonnes’ *Matrix of Narrative: Family Systems and the Semiotics of Story*.} their nodes and branches—marriages, mating, births, deaths—are the constitutive events of the story; in sequence, they produce a chain of actions, the elements of the proairetic code (Culler 204). In *Wuthering Heights*, a canonical case, the “absolute symmetry” of the Earnshaw and Linton pedigrees gives shape to an otherwise “tempestuous book” (Sanger 331), forming a network through which assets are funnelled, through strategic marriage, procreation and murder-by-attrition, to Heathcliff. *Howards End*, a generic hybrid, looks less incoherent once we see it as the collision of many genealogical genres: marriage comedy, recognition plot, domestic drama, Condition-of-England novel, family saga.

The plot is a rhizomatic mess of biological and other inheritances (Fig. 5a and 5b). Margaret does well to call it a “tangle” (141, 334, 337). The tangle is necessary, creating the lines along which the house can be transmitted from one Mrs. Wilcox to the next, and then to Leonard’s son. The plot’s many and often implausible turns might be thought of as a series of events orchestrated by Mrs. Wilcox’s spirit to ensure the delivery of her gift against the obstacles set up by her family, by social conventions, and by the law. For the Wilcoxes, letting the house “pass out of the family” is tantamount to “dislocate[ing] Society” (123). But standing above a “society [that] is based on the family” (315), Ruth, the genial plot-master, makes sure that the plot will do her will.
Figure 5a. Genealogies in *Howards End*, omitting Laura and Blanche (nées Bast) and Mrs. Warrington Wilcox. Infertile marriages are indicated by +; X indicates fertile unions, legal or not. A death in the story is marked with †; underlined unions and births also occur in the story.

Figure 5b. Simplified genealogies in *Howards End*, with important non-genetic (epigenealogical) connections. The solid red arrows trace the inheritance of Howards End. Green dashed lines indicate special friendships; the purple, unofficial infertile romances; and the pink, name echoes. * denotes hay-fever, ☼ associations with hay, and ◊ associations with rabbits.
Reading genealogies as plots is crucial to my study because it reveals a structural dimension largely overshadowed by the novel’s thematic concerns. As I explain in the Introduction and in Chapter One, the modernist bildungsroman uses contemporary biology to find temporalities that undermine to recapitulation and its associated myths of progress; these temporalities, furthermore, are enacted structurally, dissociating the bildungsroman’s traditional equation of story, discourse and character development. Now, *Howards End* is a largely chronological narrative, lacking the anachrony of *Eyeless in Gaza* and the memorial and textual flashbacks of *Portrait* and *Orlando*. This is consistent with Forster’s wariness about time-shift, as Frank Kermode argues (“Forster” 112–13), but puzzling from a novelist so uncomfortable with the fact of time’s arrow.

Writing on *Maurice*, which is likewise chronological, Jesse Matz attempts a narratological description of the novel’s oddly “conservative” yet “fractious” relationship with time (190), arguing that Forster does use anachrony, but in an unusual way—at the level not of discourse but of story, or “at some level prior to that of story and discourse…. Insofar as a chronological story is narrative’s basic precondition, *Maurice*’s time-frame fails to fit the basic narratological account of narrative” (191). *Howards End* likewise “def[ies] linearity for a better order—the more orderly configuration of chosen past and future” (190–91), but it would be far simpler to say that in both novels this kind of anti-chronology is metaphorical or conceptual instead of narratological. *Howards End*’s narrator and characters speak of time as if it might be stopped or reversed, its most apparent quarrel with linear, progressive time being thematic and discursive.

Yet because its genealogical events produce a plot, a narrative structure determined largely by time, and because Forster stresses the existence of two conflicting kinds of
genealogy, the largely thematic and discursive concerns with time, progress and value are, in fact, also formal features of the work. The anti-chronological desire expressed by narrator and characters alike does become a structural element, because it reflects the novel’s central *agon*, the conflict between ways of life and between characters (the Schlegel sisters, Ruth, Miss Avery against the Wilcoxes), which generates the plot. The result is a version of the double plot structure Forster’s other novels use to inscribe their covert homoerotic dynamics. There is, in other words, a homology between the double plot in *The Longest Journey*, which uses covert homoeroticism to queer its manifest heterosexual story, and the double plot in *Howards End*, whose connected but opposed plots—genealogical and *Bildung*, progressive and reversionary—queer each other.

It helps to see that the novel’s central conflict is not really between filiation and affiliation; it is between two views or models of genealogy, one associated with the Wilcoxes, the other with the Schlegels. Though Forster is clearly more sympathetic to the latter, their associated genealogical model is just as flawed, on its own, as the other. It is thanks to Leonard’s intervention that these two insufficient models are connected into a plot complex enough to counter narrative entropy and avoid the facile ideological traps of both the genealogical novel and the bildungsroman.

Genealogists call the two kinds of family tree that collide in *Howards End* descendant and *ascendant* trees (see, e.g., M. Smith *passim*). Descendant trees follow an individual’s lineage forward in time, producing a chronological branching structure; ascendant trees trace the lineage back in time, producing an anti-chronological branching structure (see Fig. 6). In *Howards End*, some characters, primarily the Wilcoxes, are strongly associated with descendant trees: their social, professional, ideological and reproductive
activities are oriented toward the future. Its main representative, Henry Wilcox, is also
the family elder, who generates the succeeding Wilcox generations—first Charles, Evie
and Paul, then Charles’s own children. We see his descent—in more ways than one, as it
turns out. With the Schlegels, by contrast, we see “their origin” (26), for they are
associated with ascendant trees. Like Ruth Wilcox, they are more concerned with
“ancestors” than descendants, and they “worsh[i]p the past” (*Howards 19*). For the
Wilcoxes, the past means the days “savagery” from which we have progressed (172); for
the Schlegels, it means the Golden Age of “Esterházy and Weimar” (26). By insistently
linking his two primary families with two kinds of family tree, Forster produces a novel
whose central conflicts are not only between ideas but also between two plots with
opposite temporal orientations. The novel evidently favours the Schlegels, but their
associated plot is just entropic as its opposite (Fig. 6).

Forward-looking, the Wilcox current suggests progress and expansion. But its
structure, a progressively more ramified tree, implies dissipation. Though Henry’s
successes seem to confirm his faith that “the tendency of civilization” is “upwards” (188),
the future promises a decline not as uncomfortable but as marked as Leonard’s.
Representatives of efficiency, capitalism, empire and reproductive futurism, the
Wilcoxes are doomed by their very success. “Without their spirit life might never have
moved out of protoplasm,” Margaret admits (172), yet “the energy of the Wilcoxes” (21)
is largely “wasted energy” (174) because it simply increases the demand for exertion. They always need more capital and territory to maintain their standard of living. This entropic narrative reveals the structural and ideological similarities between the worlds of empire and “marriage settlements” (25). Margaret’s advice to Mr. Wilcox, that he “divide his income into ten parts” and distribute it among his children (177), exposes the uncomfortable fact that his resources can sustain only so much partitioning. Paul, who “hasn’t a penny” (18), must boost his father’s stretched inheritance by participating in colonial expansion, an activity many British commentators, conservative and liberal, saw as a dilution of national vigour (McDuffie 79). Evie’s wedding is similarly viewed by Henry and Charles as a drain on family money. Charles may stand for the Social Darwinist doctrine of “‘everyone for himself,’” but now that doctrine threatens “to leave his children poor” (Howards 213). In both imperial and marital contexts, breeding like rabbits may “keep England going” (ibid. 271), but the going is directed towards dissipation and sameness, a fate suggested when Charles’s sons are called “edition[s] of Charles” (182). These entropic dynamics are evident in diagrams of family trees in general, of blending inheritance in particular (see Fig. 4).

The backward-looking Schlegel plot is in some senses antithetical to the Wilcox plot: nostalgic, idealist, artistic and beset by modernity. Hating “plans” and “lines of actions” (6), they think as little of the future as their unearned income allows. The novel is more sympathetic with this failing, for their nostalgia brings them closer to Ruth embodiment of true progress as a reversion. Their father Ernst likewise dreamed of reversing the clock, to escape the “Imperialism” of modern Germany and “rekindle the light within” (27) in the Germany of “Hegel and Kant” (26), birthplace of Bildung. Yet if Forster favours the
Schlegels, their nostalgia is just as dissipative as the Wilcox cult of efficiency, which “cares too much about success, too little about the past” (171). Margaret protests too much when she denies being “a barren theorist” (7), and Helen ultimately despairs that “it makes no difference thinking things out. They come to the same” (172). Their exalted “personal relations,” Margaret fears, will “lead to sloppiness in the end” (25). The family is tending towards the spinster’s barrenness: Margaret is “old-maidish” (157), Helen “an old maid” (189)—same with their brother, “Auntie Tibby” (40). The Schlegel plot’s shape as an ascendant tree reveals a temporal mirror-image of the progressive, entropic Wilcox plot.

The distinction between descendant and ascendant trees is abstract, but Forster concretizes it with the imagery and symbolism of rivers and trees. These two natural forms, both frequently associated with lineage, suggest the alternate views of genealogy exemplified by the Wilcox (trees ramifying into ever smaller branches) and Schlegel families (rivers also ramify, if followed against the current). Fittingly, trees and rivers come together at the moment of Helen and Margaret’s reconciliation at Howards End: “The present flowed by them like a stream. The tree rustled. It had made music before they were born, and would continue after their deaths, but its song was of the moment” (312). The coupling of time with the wych-elm concretizes the novel’s contending genealogical plots, and it nicely summarizes the novel’s generic ambivalence between the individual focus of the bildungsroman (“of the moment”) and generational focus of the family saga (“before they were born … after their deaths”).

Though the wych-elm plays an important symbolic role in Howards End—its fate being coupled to that of the house (334) and of England (203)—rivers more consistently
and clearly illustrate the novel’s thematic, philosophical and structural engagements with time, entropy and inheritance. Rivers connect characters, especially Margaret and Helen, and link characters to Howards End. More to the point, rivers can be read as either (or both) descendant or ascendant genealogies, and as such they incarnate the novel’s central conflict between Schlegel and Wilcox. The Wilcox stream is most evident in Evie Wilcox and Percy Cahill robustly heterosexual and conventional courtship, whose “habitual course” strikes Margaret as an inimical force, an oppressive “torrent of … love” (149). She prefers “her backwater, where nothing happened except art and literature” (149)—that is, to read back-water literally, she prefers the opposite stream, where water runs backward or upstream. Her “backwater” is a tonic to “the continual flux of London,” the entropic movement of “all the qualities, good, bad and indifferent, streaming away—streaming, streaming for ever” (179). But “backwater” also suggests that her own course is equally entropic: its movement has ceased in stagnancy.

On their own, then, the Wilcox and Schlegel streams—both descendant and ascendant genealogies—lead equally to sameness and exhaustion. The grayness associated with the Schlegels alerts us particularly to Forster’s commitment to connecting differences rather than to doctrinal belief in any one philosophy: “The world would be a gray, bloodless place were it entirely composed of Miss Schlegels,” admits the narrator; “but the world being what it is, perhaps they shine out in it like stars” (25–26). The same goes for the Wilcox energy, which, though dangerous if given too much prominence, has ensured that England has risen above “savagery” (172). To connect the two streams requires a mediating intervention, which might defy the entropic fecundity of the Wilcoxes, barrenness of the Schlegels and, one might add, poverty of the Basts and lineal extinction.
of the Howards. This mediation is supplied by Leonard. As individuals, he and Jacky epitomize the entropic failure of Bildung: their ontogenetic trajectories are sinking rather than rising, just like the phylogenetic trajectories of the Wilcoxes. But they—especially Leonard—provides the crucial connection between the two genealogical plots, the connection that reverses their equal but different forms of entropy. To borrow the language of plant breeding, Leonard performs the role of cross-pollination, bringing together two enfeebled lineages and revitalizing them, reversing their entropy, through “hybrid vigour” (the tendency of two inbred lines to produce hybrid offspring that exceed both parents in fitness; see Bruce 627–28). When he and Helen procreate a child, they productively complicate the simple opposition between the equally dissipative or entropic future-oriented and past-oriented plots that impede connection between Schlegel and Wilcox (Fig. 7). (They also thus provide a problematic yet effective way for Leonard to complete his thwarted development in his phylogenetic continuance.)

![Figure 7](image.png)

**Figure 7.** By procreating, Leonard and Helen produce a hybrid form of descendant (left) and ascendant (centre) trees; structurally more like the ascendant, but now chronological, it becomes a model of convergence and connection rather than divergence and entropy (right).

Again, these structural abstractions are concretized in Forster’s fluvial imagery and metaphors. In his frequent bird’s-eye-views of England, he stresses the flow of rivers descending to the sea; but now and then the current runs the other way: “streams do divide” against their usual tendency to converge (*Longest* 272) and “the Thames … run[s] inland from the sea” (*Howards* 158). This bi-directionality recalls Bergson’s claim that
“there is in reality but a certain current of existence and its antagonist current: hence the whole evolution of life” (L’Évolution 186). As I read Bergson—and Forster—neither current can account for “evolution” unless it is connected to the other.

For Forster, the connection is sometimes temporal, in the oscillation between progress and reversion. In “What I Believe,” he questions the incompatibility between Social Darwinism, with its efficiency and force, and the calm needed for “civilization”; he admits “all society rests upon force. But all the great creative actions, all the decent human relations, occur during the intervals when force has not managed to come to the front” (Two Cheers 68). To have overlooked these “periods of quiet that are essential to true growth” is one of Margaret’s failures, though one she ultimately redresses (Howards 77).

Or sometimes the connection is spatial. Howards End has value not only in itself but also in its juxtaposition with the nearing London’s sprawl, in a liminal land where “all the alluvial complexities of the Thames valley, merging into one another, differentiating, pushing out tongues of meadowland or wood, creating clear yet countless subtleties of blue and green” (Arctic 249). In “Arthur at Ampelos,” rivers are once again entangled, multidirectional, though here they are metaphorical, made of yellow marigolds, streaming in dazzling beauty down towards the sea. At the further corner of the field, where an outcrop of volcanic rock terminated the alluvial land, there began a counter-stream of crimson poppies, which spread in fan formation far into the mass of gold. Not in the rainbow did tints mingle more imperceptibly, and there was no point where the eye could decide that the field had passed from one colour to the other (ibid. 243)
The floral stream and counter-stream, the richness of the resulting image, suggests the productive connection between two different world views—not exactly those embodied by the Schlegels and Wilcoxes, but, as oppositions, structurally like them. Arthur, an archeologist studying the “prehistoric civilization of Crete … in the hope of not merely discovering its offshoots, but also its origins,” charts value along a temporal axis; his aunt, who admits that “origins … bored her” and loves the “beautiful” regardless of its age (ibid. 242), ranks value on an aesthetic axis. The axes meet in “the rainbow” of colliding floral streams, which mix but whose individual marigolds and poppies remain distinct. Margaret’s great insight is to realize both streams are necessary because their connection is what matters. In “The Other Boat,” an undertow carries Lionel March’s murdered lover Cocoanut “contrary to the prevailing current” to the site of Lionel’s suicide (Life 196)—which isn’t to deny “the prevailing current”: after all, it is an early version of Lionel, Clesant March, that sparks the plot of Arctic Summer by seeking a picture of an ancestor whose strange likeness suggests “Mendelism” (148).  

The key role Forster assigns to connection clarifies how Leonard becomes the novel’s structural and ethical centre. It is through Leonard that Margaret recognizes in Howards End “the future as well as the past” (337)—a corrective to her bias for the past alone. Leonard connects the Wilcox current to the Schlegel countercurrent by means of procreation. If Charles’s fertility enlarges the empire of gray, Leonard’s ensures the persistence of “colour” (336). Downtrodden as he is, Leonard heralds “a nobler stock”

55 Structurally equivalent to genealogies, Forster’s rivers are also symbolic routes to the world of fantasy where, Miracky observes, there is room for homoerotic camaraderie, friendship, spiritual unions. Looking up the river from Oniton, Margaret thinks “Fairyland must lie above the bend” (221). She’s right. The “murmurs of the river that descended all the night from Wales” (236) link Margaret and Helen symbolically and structurally; its “murmurings” fill the air when they are most divided, one of them betraying Leonard with a hypocritical letter, the other bedding him through misguided pity (240); the sound of the water thus anticipates their conciliation, at Howards End, occasioned by Helen’s pregnancy.
(320), in contrast with the Wilcox tendency to bleed nobility with each successive generation: Henry’s “nature,” we are pointedly told, “was nobler than his son’s” (95).

Only in death, however, can the crucial connection be forged; only once “Leonard lay dead” (327) does the narrator revert to his earlier musings about transmission “where there is no bond of blood” (96):

life was a deep, deep river, death a blue sky, life was a house, death a *wisp of hay*,

a flower, a tower, life and death were anything and everything, except this ordered insanity, where the king takes the queen, and the ace the king. Ah, no; there was beauty and adventure behind, such as the man at her feet had yearned for; there was hope this side of the grave; there were truer relationships beyond the limits that fetter us now. (327, my emphasis)

Readers impatient with Forster might find this passage typically muddled: what coherence can be found in the metaphor of life as both river and house, of death as both sky and hay? Yet this passage of “ordered insanity” is the novel’s central structural node; it is where the many plots and symbolic threads come together, and where Leonard’s functional importance is asserted. His death, “a wisp of hay,” connects him rhythmically to Ruth Wilcox, whose death had moved the narrator to ask, “a wisp of hay with dew on it—can passion for such things be transmitted where there is no bond of blood?” (96). In a morbid sense, Leonard’s death suggests a positive answer. The “deep, deep river” of “life” once again implies the two currents that are brought together by Leonard: one moving towards “beauty and adventure behind,” the other towards “truer relationships” ahead. His death is the moment when the Schlegel, Bast and Wilcox lines meet, thus satisfying Ruth’s desire to give Howards End to Margaret.
While the Wilcoxes avoid connection, Leonard connects despite himself. Most importantly he joins the Schlegel ascendant tree (through Helen) to the Wilcox descendant tree (through Helen’s kinship with Margaret), so that the two dissipative plots become a convergent one and the inheritance of Howards End is thus redirected into a new channel. Before Leonard’s intervention, the house was transmitted from Ruth to Henry, who plans to bequeath it onto Charles along the entropic Wilcox line. Along the Schlegel line, from Ernst to Margaret, Helen and Tibby, we find the equally entropic transmission of culture. The two entropic movements are, significantly, checked by a genealogical event, Helen and Leonard’s fertile union, which brings their contradictory currents into contact. Leonard pays the price for connecting the streams, dying by Charles’s sword and by the Schlegels’ books—a crisis that leads to Charles’s arrest, Henry’s moral collapse and the rerouting of Howards End from Charles to Margaret.

This central moment of connection is actually produced by Leonard in tandem, as it were, with his structural double—Paul Wilcox, of all people. Before she even knows why Helen has gone into exile, Margaret seems to intuit her pregnancy by Leonard when she traces the tangled plot back to Helen’s brief romance with Paul:

Can human nature be constructed on lines so insignificant? The blundering little encounter at Howards End was vital. It propagated itself where graver intercourse lay barren; it was stronger than sisterly intimacy, stronger than reason or books. In one of her moods Helen had confessed that she still “enjoyed” it in a certain sense. Paul had faded, but the magic of his caress endured. And where there is enjoyment of the past there may also be reaction—propagation at both ends. (275)

56 Entropy characterizes not only the fortunes of Howards End’s legatee Charles Wilcox, but also the gradual extinction of the Howards, who lose the house because “things went on until there were no men” (271). This extinction mirrors the “decline of the [British] birth-rate” that worries Mr. Cunningham (45).
The passage is a miniaturization of Helen’s plot in *Howards End*. With its almost comically reproductive metaphors, it begins by rehearsing the genealogical imperative: the “tiny mishap” of heterosexual attraction (275) overcoming the things Margaret holds dearest: “sisterly intimacy,” “reason” and “books.” The kiss Helen shares with Paul sets the plot off on its forward trajectory; it is “vital” and overcomes “barren[ness],” but to Margaret’s eye its propagation is “the growth of morbidity” (275)—entropy. The countercurrent soon intrudes, here as so often with the Schlegels with the mention of “the past.” “Where there is enjoyment of the past there may also be reaction—propagation at both ends”—what the narrator means here, exactly, is rather difficult to pin down. But his evident implication is that “enjoyment of the past” productively enriches as it counters the prevailing current of the genealogical imperative. The result is “propagation at both ends.” The novel’s developmental plot is therefore bidirectional: on one hand there is development, in which “man … digest[s] his own soul” (275)—the forward but entropic drive associated with Paul and the *Bildung* plot; on the other there is the true but hidden cause of Helen’s exile, the gestation of a new soul—the countering momentum associated with Leonard and the family saga.57

Helen’s pregnancy reverses yet another case of entropy—her growing estrangement from Margaret. Like the Wilcoxes, who drift apart after Ruth’s death (157), and the Basts after Leonard’s marriage (234), the sisters are from the outset “beginning to diverge” (28); by the time Margaret accepts Mr. Wilcox’s proposal, they are separated by “the widest gulf” (171), which is widened further by Mr. Wilcox’s part in Leonard’s ruin. Seeing Helen pregnant by Leonard causes Margaret to recall their bond:

---

57 Digest and gestate share the root “to carry” but perform it in opposite directions: the first, catabolic, is to carry (break) apart, the second, anabolic, to carry forth (*OED* “digest, v” and “gestate, v”). See also page 93.
they never could be parted because their love was rooted in common things…. All the time their salvation was lying round them—*the past sanctifying the present*; the present, with wild heart-throb, declaring that *there would after all be a future*, with laughter and the voices of children. (296, my emphases).

By brokering Margaret and Helen’s reconciliation, Leonard redefines Margaret’s notion of time and, in doing so, suggests a break between the narrative’s temporalities and the entropic arrow of time (according to contemporary physicists, time’s arrow is determined by the irreversible increase of entropy; Whitworth, “Inspector” 58). Past, present and future now seem inter-dependent if not simultaneous, and humans better able to exist in time without being constrained so entirely by futurity. Thus *Howards End* upends the masterplots embedded in the structures of the bildungsroman and the family saga, masterplots justified with the scientific authority of recapitulation theory.

To reiterate, Forster’s critique is aimed at ideological appropriations of procreation and family, not procreation and family themselves, for he was ever concerned with disparities between the institution and the realities of family. *Howards End* foregrounds the difference in Helen and Leonard’s travesty of the marriage plot, and of Victorian and Edwardian mores. All his novels confront the dishonest, prudish whitewashing of what we now call family values with the multiplicities of actual kinds of family. Though often material for domestic and social comedy, this confrontation can be seen in a more urgent and personal light in *Maurice* and the stories of *The Life to Come*. The same is true of his 1939 broadcast “Racial Exercise,” which represents Nazi racial policy as the logical extension of genealogical snobbery. The essay begins whimsically enough: “If I go the right way about it, I come of an old English family, but the right way is unfortunately a
crooked one. It is far from easy going in the branches of my genealogical tree.” It takes a “zigzag course” to arrive at a family with roots, the Sykes; “if I take a wrong turning and miss the Sykes, darkness descends on my origins almost at once. Mrs. James is a case in point, and a very mortifying one…. I am directly descended from her” (Two Cheers 17).

Written three decades after Howards End, the broadcast develops an argument about heredity, purity and genealogy present in his plots beginning with Where Angels Fear to Tread. In Arctic Summer, written in 1911 and 1912, Venetia pre-echoes “Racial Exercise”:

“A genealogical tree that is genealogy would be valuable,” she says, but

“people are so apt to make a fuss about their eminent ancestors… and to hush up those who aren’t. I know by my father. When he talks of ‘family’ he means only his grandmother’s family. On the other sides he was nothing, and this gives a false view…. [I]f you go back to the tenth generation hasn’t each of us over a thousand ancestors, and it isn’t likely all of them were Dukes.” (151)

It is also Venetia who speaks of “Mendelism” (ibid. 148), as Forster does in the optimistic conclusion to “Racial Exercise”:

I wish that Mendel’s name was mentioned in current journalism as often as Freud’s or Einstein’s. He embodies a salutary principle, and even when we are superficial about him, he helps to impress it in our minds. He suggests that no stock is pure…. He has unwittingly put a valuable weapon into the hands of civilized people. We don’t know what our ancestors were like or what our descendants will be like. We only know that we are all of us mongrels. (Two Cheers 19–20)

Forster sees great ethical potential in an atomistic theory of inheritance that normalizes atavism, as we have already seen, not least because it invalidates theories of blending
inheritance and thus maintains direct and undiluted access to past forms. Mendelism fatally complicated the notions of progressive development, degeneration and atavism that seem so coherent in a recapitulatory framework. In *Mendel’s Principles of Heredity*, Bateson hints at these complications. He notes that “reversion … may be brought about by the omission of an element or elements” (279), which is what recapitulation theory would assume; but “conversely,” he adds, “the return may occur by *the addition of some missing element needed to complete the original type*” (279, my emphasis). This type of reversion would constitute a progressive atavism, an oxymoron. The idea that an “original type” might be recovered by *adding* a “missing element” doesn’t fit recapitulation’s implicitly irreversible, additive model; but it is orthodox Mendelism.

A genetic solution to evolutionary entropy, Mendelism suggests how the novel chooses heirs for *Howards End*. Mendelians recognised the benefits of outcrossing, as had Darwin, but they (unlike Darwin) could explain them. By “reshuffling” the “units” (genes) we are made of, “sexual reproduction gives the opportunity for… separate useful characters to be combined in a single breed” (J. Huxley, *Essays* 33). Such enriching combinations are reduced when same breeds with same, and to be “pure,” as Leonard is said to be at the novel’s end, is therefore often to be “enfeebled” and incapable of “regeneration” (*Howards* 313). By the same logic Leonard and Helen’s son is blessed by combining the latent nobility of his patrilineage with his mongrel matrilineage, which productively joins “two supreme nations, streams of whose life warmed [Margaret’s] blood, but, mingling, had cooled her brain” (198). The house, after all, is to be inherited not by pure but by “nobler stock” (*Howards* 320).
Conclusion

The fact that nobility requires a “throw back” (320) brings us back to the temporal multiplicity Howards End enacts, through its genealogies, in order to challenge the attractive but sinister simplicity of recapitulation theory. The challenge appears time and again in Forster’s fiction and nonfiction alike. In “What I Believe,” most notably, he deplores how persuasively historical and nationalist narratives equate “force and violence” with progress. The equation is so ingrained that “some people call [their] absences ‘decadence,’” that is regression, whereas he would call these absences “‘civilization’” (Two Cheers 68). The affinities to Carpenter are yet again clear, for Carpenter similarly envisioned progress through reversion. Humanity’s very health, he argues, depends on a “Return to Nature,” for unidirectional progress can lead only to disaster (Angels 246). So we must “go back to root-heeds, or root-principles” (244)—a kind of strategic atavism he calls “the reversionary process” (246). Like a tree, humanity “hardens” as it develops unless “a distinct counter-current” allows “a return to an earlier and more primitive stage in social development” (246). This, for Carpenter, is the key to true progress: “these movements are no mere reversions, but point pretty distinctly to fresh developments from the earlier ideals which they imply” (246).

Carpenter’s model is not Mendelian, but it parallels the “salutary principle” Forster would find in Mendelism: “that no stock is pure, and that it may at any moment throw up forms which are unexpected, and which it inherits from the past” (Two Cheers 19).

Working this Mendelian logic into the plot of Howards End, Forster deftly bridges the ostensibly antithetical systems of physical and spiritual inheritance. If Ruth “believed so in ancestors” (97), it is not in a way that the Wilcoxes can imagine; for them, her very
idea of dissociating blood and property is “Treachery” (97) serious enough to “dislocate society” (123). Their own valuation of ancestry and houses is financial or sentimental, and though they think “home life is what distinguishes us from the foreigner” (257), they are always “on the move” (134). In this Ruth’s “children have all taken after him” (73), joining the modern “nomadic horde” that “accrete[s] possessions without taking root in the earth” (146). By contrast, Ruth’s idea of succession has as much to do with place as with blood: she “cared about her ancestors” (19), but largely because they went “back to the land” (205). When she sees a worthy “spiritual heir” in Margaret (96), who also deplores the modern “craze for motion” and pins her hopes on a return to the earth-bound ways of the past (337), Ruth apparently takes the long view, for it is Leonard who must “get back to the Earth” (115)—literally in death, figuratively by siring a yeoman son.

Ruth’s leitmotif is hay, and the novel’s closing words—“it’ll be such a crop of hay as never” (340)—promise that the house will be returned to the Howards, even as it is tenanted by representatives of the Schlegel, Wilcox and Bast lines. Strictly speaking, the Howards are almost extinct, and the survivors (Ruth’s children and grandchildren) are barred from the house by nature (hay-fever) and by law (Henry’s revised will). But Forster suggests that the Howards survive, non-genetically, by association. Almost everything we know of them, including their link to Miss Avery, is revealed in a moment of tactlessness by the endearing idiot Dolly Wilcox: “Hadn’t Mrs. Wilcox a brother,” she muses, “or was it an uncle? Anyhow, he popped the question, and Miss Avery, she said ‘No.’ … Tom Howard—he was the last of them…. I say! Howards End—Howard’s Ended!” (201). In her belaboured wordplay, Dolly unwittingly expresses a truth her in-laws could not have imagined: the Howard family and Howards End, the house, are one.
She also makes it possible to trace structural, thematic and rhythmic—i.e., non-genealogical—connections between Ruth, Miss Avery, Margaret and Leonard’s son.\(^58\)

Ruth and Margaret are joined by a bond more profound than marriage to the same man; aside from their unlikely friendship, they have the same “way of walking,” and Miss Avery fancies them interchangeable (199, 267–68). Margaret is also symbolically joined to Miss Avery’s family: she is led to Howards End by Miss Avery’s niece Madge—a diminutive of Margaret.

These mysterious, non-genetic connections begin to cohere at the novel’s end. The hope raised by Leonard and Helen’s son is partly genealogical, for he is their continuance. Equally significant, though, is the baby’s special bond with Madge’s son, with whom he’ll be “lifelong friends” (333). The boy is named Tom (297), which bonds him suggestively to Tom Howard, who would have, had he lived to procreate, kept the house in the Howard family. Young Tom isn’t really a Howard, of course: he has no Howard blood. But Forster encourages us to consider him one anyway, through the symbolism of his name, through his physical proximity to Howards End, and even through the counterfactual marriage between his aunt Miss Avery and Tom Howard. Tom’s proximity to the house is formalized through his friendship and—Forsterian logic suggests—his eventual homoerotic bond to Helen’s son. A “wonderful nursemaid,” Tom takes the baby “to play with hay” (333) and thus stakes, through “lifelong” friendship, a legitimate claim on Howards End. The friendship promises to be deep: from the early story “Ansell” through *Maurice*, Forster particularly values cross-class attachments with garden-boys that had provided the happiest moments of his own life (Furbank I.30–31).

\(^{58}\) Forster’s “rhythm” (*Aspects* 112) is one among many similar models modernists used to free fiction from story’s “time-sequence” (20) and plot’s “causality” (60); crucially, rhythm can forge atemporal or anti-chronological relations because it operates by “radiating in several directions” (*ibid.* 114).
Ultimately, then, the house will revert not only to Leonard’s son but also to young Tom—to the two boys “playing uproariously in heaps of golden straw” (266). Howards End has not an heir, but two heirs—two heirs who like Jacky’s “hair, or rather hairs,” combine the reversionary genealogical stream going “down her back” and the future-oriented Bildung stream “created for a higher destiny” (48).

And so the house regains its original yeoman stock, exemplified by Miss Avery’s “unostentatious nobility” (267) and Ruth’s “instinctive wisdom … to which we give the clumsy name of aristocracy” (19). Theirs is “not an aristocracy of power, based on rank and influence,” as Forster writes in “What I Believe,” but rather one “found in all nations and classes, and all through the ages,” which “represent[s] the true human tradition, the one permanent victory of our queer race over cruelty and chaos” (Two Cheers 70).

Fittingly, because it takes all kinds to make a Forsterian aristocrat, those who ultimately inherit the house are products of mixed blood and mixed modes of inheritance. This mix is not a union or synthesis: it is a weave—a “rainbow bridge” (183)—whose beauty inheres in the combined effect of many threads of distinct colour.

Even optimistic readers of Howards End must acknowledge the ambivalence of its closure. The happy ending is happier for some characters than for others, and the “permanent” idyll of Howards End, though “coloured” by Helen and Margaret’s “memories,” is already threatened by the entropic “creeping” of London’s “red rust.” London, furthermore, is “only part” of a global tendency towards sameness: “life’s going to be melted down, all over the world” (337). Margaret agrees: places like Howards End are but “survivals, and the melting-pot was being prepared for them. Logically, they had no right to be alive.” But she holds out “hope,” which the novel delivers both
thematically and structurally, “in the weakness of logic” (337). So she comforts Helen with the prospect of a historical reversal whose unlikelihood is mitigated by the reality of Mendelian throwbacks:

“Because a thing is going strong now, it need not go strong for ever…. This craze for motion has only set in during the last hundred years. It may be followed by a civilization that won’t be a movement, because it will rest on the earth. All the signs are against it now, but I can’t help hoping, and very early in the morning in the garden I feel that our house is the future as well as the past.” (337)

Those who hang their hopes on “the weakness of logic” don’t often seek comfort in science, but then, new discoveries often defy what had seemed logical. Science, Forster believed, “will get deeper and deeper in to the facts of life, and the fact of life will always elude it, like the retreating rainbow” (Letters 301); but by idealizing “the rainbow bridge” (183) against the “universal gray” (125), Howards End suggests that though science “will never explain the ultimate constitution” (Letters 301), it might help us envision our constitution—and our potential—in radically new ways. As G. Clarke Nuttall writes in a 1908 attempt to educate “the general public” about Mendelism, the “larger value” of the still-infant science “lies in its suggestiveness; … it stimulates the imagination with its possibilities; it opens up a fresh point of view from which to make observations; it is a new era in the study of heredity” (529).

After reading Eddington’s Nature of the Physical World in 1928, Forster records his amazement at the facts that “our spasmodic instincts and confusions about time have a value which ‘Astronomer Royal’ time hasn’t, that one thing—the quantum—appears to have absolute existence in the physical world” (Commonplace 46). These facts have little
directly to do with the problems of genetics and genealogy in *Howards End*, but certain affinities are striking: the “absolute existence” of “the quantum” mirrors the atomistic, non-blending aspect of Mendelian heredity; and Forster’s preference for the non-linear time of human mind breaks the linkage between our lives and the chronological process of ontogeny. “Of course we grow old,” he writes of Bennett’s literalism in *The Old Wives’ Tale*: “but a great book must rest on something more than an ‘of course’” (*Aspects* 26). If “time is the real hero of *The Old Wives’ Tale,*” as Forster puts it (*ibid. 26*), it is just one of the two main currents of *Howards End*, whose Bildung plot is ever challenged by the possibility of reversion. Helen is wrong to think that her plans for herself and her baby “won’t be changed by a slight contretemps,” for it is the contretemps that ensures their “futures” (291).

Contre-temps, which translates as “against-time,” is apt. It suggests reversion in both negentropic and heterodox senses. In music, prosody and dance, contretemps is where “the accent falls a little differently,” as Woolf describes modern fiction (*Essays IV.162*). (And here we remember another overlooked yet important character, Tibby Schlegel, who, being “profoundly versed in counterpoint” [*Howards 29*], is the novel’s loudest spokesman for the under plot.) By many in their time, Margaret and Leonard would have been dismissed as people who “cannot develop as they are supposed to develop” (*ibid. 335*). By the progressivist logic of recapitulation, and polite society, each is somehow out of time, out of the main genealogical current: Margaret is willfully childless, Leonard a case of “degeneracy” (*ibid. 249*). But the Mendelian paradigm allows both to benefit—indirectly, but undeniably—because her nephew, his son will “throw back to a nobler stock, and breed yeomen” (320).
CHAPTER THREE

“THE EDUCATION OF AN AMPHIBIAN”: NEOTENY, ANACHRONY AND BILDUNG IN ALDOUS HUXLEY’S EYELESS IN GAZA

“The truth about the human species is that in body, spirit, feeling, and conduct we are designed to grow and develop in ways that emphasize rather than minimize childlike traits…. We were never intended to grow ‘up’ into the kind of adults most of us have become.”
—Ashley Montagu, Growing Young (2)

“Mr. Fink-Nottle has a strong newt complex…. That’s why I was so amazed when you told me he had suddenly risen to the surface like this.”
—P.D. Wodehouse, Right Ho, Jeeves (11–12)

In his essay “Education of an Amphibian” (1954), Aldous Huxley announces that “every human being is five or six amphibians rolled into one. Simultaneously or alternately, we inhabit many different and even incommensurable universes” (Essays V.191). In these two sentences, Huxley condenses the primary thematic and philosophical concerns of his fiction. He sees in amphibians an attractive model of the human condition, and not only because their life on land and in water mirrors “human amphibiousness—the multiple double life of creatures indigenous to half a dozen incompatible worlds” (ibid. 191): equally important is the amphibian’s elaborate life-cycle. Though less symbolically charged than a butterfly’s, the tadpole’s metamorphosis into a frog is just as dramatic. In it Huxley found an allegory of human growth and potential for enlightenment.

The problem, as Huxley sees it, is that while “the tadpole knows precisely when to get rid of its tail and gills, and become a frog” (ibid. 191), we humans suffer from a crippling disharmony between our various “double lives” (ibid. 196). A manifold nature grants us deep reservoirs of potentiality, but it also puts us at odds with ourselves, resulting in no end of psychological, social and political ill. Making the best of our amphibiousness is therefore, as the essay’s title suggests, largely an issue of education and development.
“Education of an Amphibian” is the culmination of Huxley’s favoured allegory of development and self-realization. His equation of amphibian metamorphosis and human growth appears as early as *Proper Studies* (1927), where he claims that “to study human psychology exclusively in babies is like studying the anatomy of frogs exclusively in tadpoles” (*Essays II*.158). In one sense, he faults psychology for overemphasizing how much personality is determined by passive childhood experience, while undervaluing the extent to which adults can redirect their own formation. In another sense, he obliquely reiterates a point so often emphasized in his novels: that most humans are, in one way or another, still just babies—tadpoles, “full of batrachian grapplings in the dark,” as Willie Weaver puts it in *Point Counter Point* (129).

For Huxley, who had once “most desperately want[ed] to be always young” (qtd. in Murray 47), infantilism is an almost inevitable consequence of being human in the modern world. Most of his characters are emotional, spiritual and ethical babies, reflecting his belief that “the majority of chronological adults never emerge from adolescence” (Atkins 53). For this reason, Huxley’s favoured amphibian is not the frog—or the tadpole that would be frog—but the axolotl. The axolotl is the Peter Pan of salamanders; as described by Aldous’s brother Julian, it “never metamorphoses into a land animal, but becomes sexually mature in the gill-breathing larval form” (*Evolution in Action* 25–26). Somatically juvenile but reproductively adult, axolotls exhibit neoteny, or juvenilization. And so, fittingly, do humans, as Aldous was well aware. Like axolotls, human adults look like the infants of our near phylogenetic kin; as Julian observes in *Evolution: The New Synthesis*, we retain those distinctly human features and behaviours that chimpanzees outgrow, like facial flatness, curiosity and playfulness (526).
A fascinating aspect of axolotl development is the fact that its neoteny—“a deviation from the standard course of amphibian ontogeny” (Rosenkilde and Ussing 665)—is, in a sense, reversible. In 1920, as Aldous was putting out his first stories, Julian published a note in *Nature* reporting that when axolotls are fed sheep’s thyroid they miraculously grow up. They lose their gills and leave the water; that is, they metamorphose into strikingly different creatures: adult salamanders. Julian’s note caused a sensation in the popular press. Within days, London newspapers were announcing the discovery of “the secret of perpetual youth” and the “Elixir of Life” (qtd. in Witkowski 112). The paper effectively made Julian’s scientific and popular reputation. It also offered the eugenicist and future Director of UNESCO a powerful symbol of wasted human potential. In *Africa View* (1931), he wonders what “causes such an arrest of personality, so that perhaps half our young men arrive at manhood, as Mexican axolotls do at their maturity, while still in the tadpole stage?” (20).

The axolotl’s unusual life-history similarly inspired Aldous Huxley. *Antic Hay*, that unrelenting satire on the restless immaturity of post-War London, closes in a lab stocked with “black axolotls” (253), while in *Point Counter Point* Lord Edward studies “the sexual activities of axolotls” (139). Seemingly incidental, these two references reveal their deeper significance in light of a third, later mention of axolotls. In *Eyeless in Gaza* (1936), arguably Huxley’s only bildungsroman,59 the protagonist Anthony Beavis meditates on a series of developmental and metamorphic images ending with the image of “sheep’s thyroid transform[ing] the axolotl from a gilled larva into an air-breathing salamander, the cretinous dwarf into a well-grown and intelligent human being” (378).

59 A case could be made, however, for *Time Must Have a Stop* (1944).
This passage, pointing to Julian’s work on induced metamorphosis, rehearses a desire for self-realization and conversion that, though more or less latent in all Huxley’s previous novels, emerges as a primary theme and narrative desire in *Eyeless in Gaza*. This in itself would make the novel a fascinating case of biology informing the modernist bildungsroman. But Huxley takes the axolotl metaphor far beyond the novel’s thematic and conceptual concern with development, using it to modify the generic structure and internal logic of the bildungsroman. The form and the ideology of the genre are thus undermined in order to rehabilitate the ideals of *Bildung*, self-cultivation and mature enlightenment (see Castle’s *Reading the Modernist Bildungsroman*).

Induced metamorphosis is implied in Anthony’s self-willed conversion from cynical immaturity to mature “non-attachment,” a Buddhist term for “the ideal man” (A. Huxley *Essays* IV.330–31). Although most explicit in *Eyeless*, Huxley’s first didactic novel, such conversion had and would always inflect his fiction. From the nihilism of *Crome Yellow* and *Antic Hay*; through the searching of *Those Barren Leaves* and *Point Counter Point*; to the mysticism of *Time Must Have a Stop* and *Island*, characters are defined by their attempt (or refusals to attempt) to self-realize. The few who succeed unlock the better self latent in them, a mature self. They are metamorphosed axolotls.

This chapter examines parallels between the biological development of axolotls and *Eyeless in Gaza*’s formal arrangement, which must rank among the most extreme of Huxley’s narrative experiments.60 Unusually for a bildungsroman, which by definition

---

60 Perhaps because he is seen as a novelist of ideas, Huxley is rarely remembered as a modernist experimentalist. Yet his novels almost all feature formal play. His use of counterpoint, most obvious in *Point Counter Point*, figures in all his fiction from the late 1920s to the late 1940s. From *Crome Yellow* onwards, he experimented with meta-fiction, shifting from primary diegesis to diary entries, poetry, journalism or other texts. Like Joyce or Eliot, he indulges in literary, pop-culture and extra-literary
demands a chronological narrative, *Eyeless* is jarringly and seemingly gratuitously anachronous. Even critics who like the novel have accused Huxley of pointlessly complicating the simple story of Anthony growing from a young boy to a middle-aged man converting to “active and positive pacifism” (15). David Daiches, for example, would prefer “a straightforward history of the development of the hero” (qtd. in Aithal 46); Phyllis Bentley more critically faults anachrony for interfering with “the slow development of personality” (qtd. in Vitoux 212–13).

Critics like Bentley clearly recognize *Eyeless in Gaza* as a bildungsroman and therefore expect a relatively circumscribed narrative structure. As we’ve seen, the bildungsroman is largely shaped by what Bakhtin called “‘biological time’—the hero’s age, his progress form youth to maturity to old age” (*Speech* 11); this linear trajectory is pointedly disarranged in *Eyeless*. What is remarkable about *Eyeless*, though, is not that it rejects “biological time,” but rather that it dispenses with one kind of biological time—linear, cumulative and widely seen as progressive—and adopts another kind of biological time revealed by contemporary embryology, genetics and evolutionary theory.

Addressing Bentley’s criticism of *Eyeless*, Pierre Vitoux argues that “Huxley is not concerned with showing ‘the slow development of personality,’ but wants to focus our attention on a crisis, psychological and moral, leading to a conversion; his vision is not evolutionary but climactic or mutative” (213). Vitoux is partly right: *Eyeless* decouples character development from chronology and crude causality; Anthony’s conversion and the novel’s fitful narrative both challenge the gradualist and recapitulatory progression implied in the term “evolutionary” (see Abbott, “Narrating” 10). But Vitoux is wrong to

---

allusions and quotations, often in French, Italian, Latin and German. Like Joyce and Woolf, he uses frequent and often confusing shifts in perspective and focalization.
oppose evolution and “climactic or mutative” change. Being versed in the latest debates in biology, Huxley knew that Darwinism had grown to accommodate some forms of sudden evolutionary change. He specifically argues in *Ends and Means* (1937), the non-fiction companion to *Eyeless in Gaza*, that evolution involves not only the gradual operations of “natural selection” but also abrupt processes like “mutation, hybridization, retardation of growth and foetalization” (*Essays IV.361*).

“Retardation of growth and foetalization” are processes that cause neoteny, and they point to Huxley’s project in his anachronous bildungsroman. His time-shifts are, I propose, analogous to the developmental phenomenon of heterochrony, of which decelerated growth and foetalization are two manifestations. In *Eyeless*, then, the formal presentation of Anthony’s development mimics the life-history of the axolotl. Like an axolotl, he is neotenous—retaining juvenile features despite having reached adulthood—and like it he holds the potential for induced metamorphosis, for radical reinvention and self-realization. Expressing its biological concerns formally, *Eyeless* is Huxley’s most systematic attempt to merge scientific knowledge with his ethics and spiritualism.

Informed by developmental biology as well as the psychology of William James and Marcel Proust and the proto-New-Ageism of F.M. Alexander, it pushes the modernist bildungsroman to the very edge of the genre’s formal limits.

**Heterochrony and Foetalization**

In the early twentieth century, neoteny and related phenomena were much discussed by biologists like Gavin de Beer who were keen on “freeing the field of discussion from the recapitulatory incubus” (de Beer 108). Crucial to this paradigm shift was the notion of
developmental *heterochrony*, a change in the relative timing and speed at which various tissues develop. Heterochrony was being recognized as a major factor in evolutionary history, particularly as it offered a powerful solution to the problem posed to Darwinism by relative sudden, large-scale changes in morphology. As Julian Huxley argues in *Problems of Relative Growth* (1931), if but a single mutation changes one organ’s growth rate relative to that of the rest of the body, the resulting changes to the organism’s morphology can be dramatic.

The most publicized work on heterochrony involved cases in which the rate differential occurs between sexual and somatic development. When sexual maturity is delayed (relative to an ancestral norm), the result is recapitulation. Over evolutionary time, that is, recapitulation results from the increasingly late onset of sexual maturation, which seems to push formerly adult stages earlier and earlier in ontogeny, sometimes even into the foetus (Figure 2). Neoteny, by contrast, is produced by the relative deceleration of somatic development, which leads to youthfulness in adulthood (Figure 3); this is a state common to dogs, axolotls and humans (Gould, *Ontogeny* 319–24, 351–404). In short, biologists were beginning to see neoteny not as an exception to the rule of recapitulation but as a different expression of the same underlying process—heterochrony. The existence of a shared underlying process rather undermined the view of recapitulation expounded by Haeckel, who saw it as the manifestation of a universal law. Ironically, it was Haeckel who introduced the notion of heterochrony in 1875, as a means of explaining—or explaining away—patterns inconsistent with recapitulation (*ibid.* 82). For de Beer, who studied under and then collaborated with Julian Huxley,
heterochrony freed biology of the “mental strait-jacket” of “Haeckel’s theory of recapitulation” (141).

Neoteny, human neoteny in particular, played a significant role in debunking the Haeckelian model that placed humans, especially those of a certain race (white), sex (male) and age (adult), at the top of the evolutionary scale. (Unfortunately, of course, those invested in these prejudices quickly found ways to fit new discoveries to their ideologies; see Gould, _Ontogeny_ 133–35). Not long before Julian’s note in _Nature_, the anatomist Louis Bolk had suggested “that man, in his bodily development, is a primate fetus that has become sexually mature” (qtd. by Gould, _Ontogeny_ 361)\(^61\)—perhaps the most potent biological challenge to human exceptionalism since Darwin. In any case, it was a theory Aldous evidently knew long before he called man “a foetal ape” in his 1939 novel _After Many a Summer_ (248). In _Jesting Pilate_ (1926), he describes human development in words redolent of Bolk’s foetalization thesis:

We are like angels when we are children…. In youth and earliest maturity we are human; the angel dies when we are men…. As middle-age advances, we become less and less human, increasingly simian. Some remain ape-like to the end.

Some … become for a second time something more than human. (Essays II.454) This passage does not merely rehearse the basic developmental homology between foetal ape and adult human. It also exploits one of its bizarre implications: as a “foetal ape” ages, it grows “less human” and “more simian.” The same is true of dogs and their closest phylogenetic relatives, wolves, as Bill Propter explains in _After Many a Summer_, Huxley’s follow-up to _Eyeless in Gaza_: “a dog’s a wolf that hasn’t fully developed. It’s

\(^61\) Bolk’s quotation is from 1926, but according to J. Verhulst he first formulated his theory of human foetalization in 1918 (100); its influence on Lacan’s mirror stage is discussed by Roudinesco (30).
more like the foetus of a wolf than an adult wolf…. It’s a mild, tractable animal because it has never grown up into savagery” (85). This is, clearly, a drastic reversal of recapitulation, where later ontogenetic stages are homologous with more advanced phylogenetic ones. Dogs did not evolve from wolves by the addition of some improved trait at the end of ontogeny (as recapitulation would suggest); instead, they evolved from wolves by stalling wolf ontogeny at the pup or “foetus” stage.

Huxley’s implication in Jesting Pilate is that if humans could only live long enough, they would literally be growing up into apes.\(^6\) This scenario underwrites Huxley’s penchant for satirical portraits of perpetual adolescents and absurdly youthful elderly men, and it provides the primary thrust of After Many a Summer’s satire on youth-obsessed America. In this bizarre novel, the eighteenth-century Fifth Earl of Gonister (whose name fuses gonad and monster) discovers a rejuvenating diet allowing him to live well into the twentieth century. But by then he has become revoltingly simian, for he is “a foetal ape that’s had time to grow up…. Above the matted hair that concealed the jaws and cheeks, blue eyes stared out of cavernous sockets. There were no eyebrows; but under the dirty, wrinkled skin of the forehead a great ridge of bone projected like a shelf” (248–50). Once highly cultured, the Earl has lost his human qualities, defecating openly and mating indiscriminately. He epitomizes, none too subtly, Huxley’s vision of humanity in the modern world.

Merely extending ontogeny prevents what Huxley would see as true growth. Tacking on more stages to ontogeny—the mechanism that produces recapitulation—is if anything regressive, bringing not wisdom, self-realization or enlightenment, but only a

---

\(^6\) Gavin de Beer considers this possibility when he writes that “a delayed appearance of new structures will mean their reduction to vestiges, unless the time at which the adult stage is reached is also delayed” (30).
phylogenetic version of second childhood. In this ontogenetic atavism, one “gr[ows] back in the process of growing up” (After 85). This is all most of Huxley’s characters can hope for. In Point Counter Point, John Bidlake nears the end of a life of reckless fun increasingly fearful and unhealthy—a moral and physical decay made worse by the sight of his own offspring “growing up; growing, they pushed him backwards” (Point 69); and indeed his accelerating senescence rapidly turns him into “an old dotard in his second childhood” (Point 143). Characters like Bidlake—and Huxley wrote many—are neither real children nor real adults: childish rather than child-like, they are also “absurd and derisive parodies of grown men” (Eyeless 345), “those dreadfully grown-up creatures in Shaw’s Methuselah” (Point 312). In most cases, they’re in a developmental muddle, a perversion of both youth and maturity.

Huxley’s musings in Jesting Pilate also suggests a way out, anticipating Anthony’s development and metamorphosis in Eyeless in Gaza. Though some, perhaps most people “remain ape-like to the end,” a few manage to recapture the angelic qualities of childhood and “become for a second time something more than human” (Essays II.454). Neoteny is of the essence here. After Propter explains the dangers of letting dogs live too long, he points out that foetalization is “one of the mechanisms of evolutionary development,” one which prevents reverting, with age, “into savagery” (After 85).

The emphasis on self-transformation and conversion runs throughout Huxley’s work, though few of his characters actually achieve it. Anthony is among the very select, and his success lies in his ability to exploit the unique features of adolescence. In The Varieties of Religious Experience, a book Huxley held very dear, William James refers to “the moulting-time of adolescence” and argues that “conversion is in its essence a normal
adolescent phenomenon” (199): no other life stage is more amenable to radical self-transformation, to “the passage from the child’s small universe to the wider intellectual and spiritual life of maturity” (ibid. 199). In Huxley’s novels, however, adolescence is a period of stagnation rather than transformation, and most of his adult characters are but old bodies with adolescent minds and souls. But extended adolescence has its rewards for the rare character, like Anthony, who chooses to “modify himself” later in life (Eyeless 317), for it is an extension of that “moulting-time,” that fertile period of developmental unrest, which James believed irrevocably foreclosed in adults (Principles I.121). By lengthening the period of human potentiality beyond childhood and youth, Huxley is once again in line with changing biological paradigms. Indeed, two years before Eyeless was published, in the preface to Elements of Experimental Embryology (1934), Julian Huxley and Gavin de Beer had felt the need to remind their readers that development is a life-long process:

development is not merely an affair of early stages; it continues, though usually at a diminishing rate, throughout life. The processes of amphibian metamorphosis or of human puberty; the form-changes accompanying growth; senescence and natural death itself—these are all aspects of development; and so, of course, is regeneration. (ix, my emphasis)

This is good news for Aldous, whose fictions are overpopulated with characters who have belatedly decided that they want to metamorphose.

For Huxley, then, the real problem faced by modern humans is not really infantilism or the complete failure to grow up, but rather asymmetrical development resulting in
overspecialization. He comments on Darwin’s loss of aesthetic sense late in life, noting that “one-pointedness may result in the more or less total atrophy of all but one side of the mind”; a man like Darwin is “completely mature” in his field but “spiritually and sometimes even ethically … hardly more than a foetus” (Perennial 299). In his fiction, similarly, characters tend to be over-developed sexually or intellectually but otherwise unformed. Some are even aware of it: in Point Counter Point, Philip Quarles argues that excessive development of the purely mental functions leads to atrophy of all the rest. Hence the notorious infantility of professors and the ludicrous simplicity of the solutions they offer for the problems of life. The same is true of the specialists in spirituality. The profound silliness of saintly people; their childishness. But in an artist there’s less specialization, less one-sided development; consequently the artist ought to be sounder right through than the lop-sided man of science. (321)

This conceit runs throughout Huxley’s work, reflecting his larger view of psychology, development, ethics and social action.

The idea that artists are more evenly developed than scientists and theologians places Quarles, Huxley’s spokesman, firmly in the eighteenth-century Bildung tradition, especially as articulated in Schiller’s letters On the Aesthetic Education of Man (1794). For Schiller, overspecialization is Bildung’s antithesis. His programme for aesthetic education aims for harmonious growth of all faculties, something he idealizes in the Greeks and deplores of finding in “us Moderns” (33). Schiller’s aim is therefore to

---

63 In Pain, Sex and Time (1939), Gerald Heard, Huxley’s fellow in the Peace Pledge Union, argues that “man has, physically speaking, specialized in unspecialization and by this means has won himself a new span of evolutionary life” (298). Huxley likewise equates specialization in individuals with specialization in cultural and phyletic evolution, where it tends to precipitate decadence and species extinction (Essays IV.361–62, 387–88). Evolutionary progress, agrees Julian, “depends on all-round improvement as opposed to limited improvement or one-sided specialization” (Ethics 36).
recreate the kind of “human nature” (31) fostered by “the polypoid character of the Greek States, in which every individual enjoyed an independent existence but could, when need arose, grow into the whole organism” (33). Such unity within diversity is qualitatively different that the diversity found in modern humanity:

With us too the image of the human species is projected in magnified form into separate individuals—but as fragments, not in different combinations, with the result that one has to go the rounds from one individual to another in order to be able to piece together a complete image of the species. (VI.vii.33, my emphasis)

This passage could easily be offered as an introduction to Huxley’s cross-section of society in *Point Counter Point*. The fragmentation the novel illustrates is an inevitable result of modern life, wherein, as Schiller goes on to argue, Greek organicism makes way for an ingenious clock-work, in which, out of the piecing together of innumerable lifeless parts, a mechanical kind of collective life ensued….

Everlastingly chained to a single little fragment of the Whole, man himself develops into nothing but a fragment; everlastingly in his ear the monotonous sound of the wheel that he turns, he never develops the harmony of his being, and instead of putting the stamp of humanity upon his own nature, he becomes nothing more than the imprint of his occupation or of his specialized knowledge. (VI.vii.35)

In contrast to this partial development, argues Martin Swales, true Bildung means “the self-realization of the individual in his wholeness” (15).

Schiller’s model helps explain Huxley’s ongoing conceptual, thematic and formal concern with age and maturity. A common thread linking his satires, dystopias and polemics is the anxiety that extended immaturity—physical, emotional, social—leads to
what Julian Huxley calls “stunted spiritual growth” (*Ethics* 140). Most Huxleyan characters are infantile because they are overspecialized. The precocious Sebastian Barnack, for example, excels at “sensuality and pure aestheticism” but remains “a spiritual embryo, undeveloped, undelivered, unillumined” (*Time* 258), and the elderly scientist Maartens is a “‘moronic baby with [a] giant intellect’” (*Genius* 8).

A few characters, however, buck this trend by trying to achieve what Huxley, echoing Kant’s model of *Bildung*, calls “enlightenment” (*Essays* IV.401). Unlike people whose “involvement with the world is only cognitive, not affective or conative,” these seekers attempt to find “a principle of integration,”

a principle that will co-ordinate the scattered fragments, the island universes of specialized or merely professional knowledge; a principle that will supplement the scientifc-historical frame of reference at present used by intellectuals, that will help, perhaps, to transform them from mere spectators of the human scene into intelligent participants. (*ibid.* 279–80)

The seekers are those “concerned with humanity as human, as potentially more than human” (*Essays* IV.279); they seek an axolotl-style metamorphosis. It is this “principle of integration” we see at work in Anthony’s meditations at the end of the novel.

A Huxleyan seeker and a “moronic baby” are both young, but in different ways. The differences between them correspond broadly to the two kinds of arrested development, which reflect different heterochronic processes.64 In the first, sexual organs mature faster than the rest of the body, as we find in many of Huxley’s precocious youths. For de

---

64 Gould differentiates between two dynamic processes, *progenesis* (accelerated sexual maturation) from *neoteny* (decelerated somatic maturation), both of which produce *paedomorphosis*, “the retention of ancestral juvenile characters by later ontogenetic stages of descendants” (*Ontogeny* 483–84). Gould’s terminology is more precise, but I follow Beer in calling both *neoteny*, partly for historical reasons and partly because, for my purposes, Gould’s better classification isn’t worth the confusion of extra jargon.
Beer’s, this limits both developmental and evolutionary potential: “neoteny involving the acceleration of sexual maturity leads to specialization and degeneration” (55). The second, which we find in axolotls and humans alike, involves “a slowing down of the rate of development of the body relatively to that of the reproductive glands” (de Beer 68).

The two kinds of neoteny are broadly equivalent to the “two roads” faced by characters in Huxley’s novels (Time 226): one leads to age, the other to maturity. True self-realization comes from choosing the latter; the former leads merely to longevity, an extended childhood followed by abrupt senescence (a trend exemplified by John Beavis, Anthony’s father, in Eyeless). Sebastian Barnack, hero of Time Must Have a Stop, realizes too late he has taken the wrong, though “more attractive” road (226):

Now he was what an old man ought not to be; and so, by straining to remain unmodified, had transformed himself into a gruesome anomaly. And, of course, in an age that had invented Peter Pan and raised the monstrosity of arrested development to the rank of an ideal, he wasn’t in any way exceptional. (272)

Neoteny, then, is both peril and opportunity. On one hand, it can lead to specialization and infantilism. On the other, it provides the necessary preconditions for metamorphosis, for the transcendence of mere humanity. Without neoteny, humans would just be apes; with it, but without active conversion, they eventually degenerate like the Earl of Gonister. But decelerated growth offers a grace period, as it were, during which right path might be taken, and bad choices corrected, before degeneration begins.

Huxley’s concern with time, development and renewal is undeniably informed by contemporary evolutionary biology and experimental embryology, especially as
theorized by figures close to him like Julian Huxley, Haldane and de Beer. By re-imagining the relation between ontogeny and phylogeny, these scientists were producing not simply a new narrative but a whole new narratology of development. From the linear masterplot of recapitulation, development was, thanks to heterochrony, being reconceived as a huge range of possible narrative structures, each build from different relative rates of growth. De Beer quite explicitly uses heterochrony to dispense with the biogenetic law, thus raising all kinds of developmental and evolutionary possibilities that Haeckel would have dismissed as exceptions or freaks. In *Eyeless*, by recruiting and adapting such processes for Anthony’s development, Huxley finds a way to rehabilitate the notion of *Bildung* by radically deforming the generic structure of the bildungsroman.65

**Anthony the Axolotl: Neoteny in *Eyeless in Gaza***

Like so many Huxleyan characters, Anthony Beavis is infantilized. His school nickname was “Benger … Short for Benger’s Food. Because [he] looked so babyish” (7); as an adult he resembles “the infant Samuel” (226). At the time of his conversion, he still “look[s] younger” than his forty-three years; as his saviour James Miller diagnoses his condition, Anthony remains in middle age what he has been “from birth” (341)—a baby. His infantilism is also more specifically identified with neoteny: in Freudian terms, he suffers from anal retentiveness, the persistence of a juvenile sense of self in sexual maturity. It is a form of arrested development Huxley deplores in *Ends and Means*, and the pacifist pedagogy he outlines in this book as in *Eyeless* includes a flexible approach

---

65 Both Gregory Castle and Jed Esty make this recuperative deformation a central feature of their analysis of the modernist bildungsroman.
to toilet training for averting neurosis and repression and therefore improving individual
and social behaviour (Essays IV.267–68). Fittingly, then, what Anthony most remembers
of his mother is her fear of filth and “germs” (Eyeless 26); and his chronic “constipation,”
according to Miller, betrays a blind and immature attachment to himself as he is and
mirrors a sceptical “what’s-the-good-of-it-all attitude” (341). Not to put too fine a point
on it, Anthony’s initial receptiveness to Miller’s teachings is heralded by a purgative
“attack of dysentery” (Eyeless 306).

It is clear from Anthony’s meditation at the novel’s end that he models his conversion
on the axolotl’s induced metamorphosis “from a gilled larva into an air-breathing
salamander.” His is the transformation of “the cretinous dwarf into a well-grown and
intelligent human being” (378). Anthony is precocious sexually and advanced
intellectually but otherwise underdeveloped; once he converts, he puts sex and learning
aside (Eyeless 203), as if to allow his less developed faculties to catch up.

Huxley also identifies Anthony with another neotenous amphibian, though the
connection here is more tenuous, the best evidence being the novel’s title. Eyeless in
Gaza alludes to a line in Samson Agonistes, with which it shares a concern with both
literal and moral blindness. But it may also refer to the salamander Proteus anguinus,
also known as the olm or “human fish” (Voituron et al. 105), a species that enjoyed
much scientific attention in the nineteenth and early twentieth centuries. Unlike axolotls,
olms are “permanently neotenic” (J. Huxley and Hogben 38): they can’t be induced to
metamorphose. It is an apt model of Anthony because “the strange Proteus,” a cave
dweller, is “blind, with tiny, sightless eyes” (Wells et al. 915).
The connection between *Eyeless* and the eyeless *Proteus* is also suggested by Anthony’s drunken vision of his university friends:

the aquarium was not only without, it was also, mysteriously, within him. Looking through the glass at those sea flowers and submarine gems, he was himself a fish—but a fish of genius, a fish that was also a god. *ICHTHUS—Iesos Christos theou huios soter.*

His divine fish-soul hung there, poised in its alien element, gazing, gazing through huge eyes that perceived everything, understood everything, but having no part in what it saw. (85)

Claims about *Proteus* aside, this passage clearly exemplifies Anthony’s potential and his failure. His identification with Christ is hubristic, to say the least, but it indicates the better, “more than human” self he might become (*Essays* IV.279); his aloofness, meanwhile, reveals how far he still has to go before he can connect with others. But I would still like to consider the olm, because there is something intriguing about eyeless Anthony believing himself a “fish [that] had found a tongue” (86). Olms don’t respond to thyroid treatment and therefore suggest the fate awaiting Anthony if he fails to change. They would thus serve as an amphibian counterpart to the axolotl in Huxley’s “two roads” model of potentiality (*Time* 226).

Then again, olms do respond to other kinds of experimental modifications, which bear intriguingly on Anthony’s growth from eyelessness to “insight” (*Eyeless* 381). The human fish had not long before been the subject of a highly publicized experiment by Paul Kammerer. As his fellow Lamarkian Ernest MacBride reports, Kammerer proved

---

66 Like MacBride, Kammerer supported Lamarckian inheritance long after it had been dismissed by most biologists. He was something of a star biologist among the public in Europe, Britain and the US. His bitter feud with William Bateson and his eventual fall from grace are described in Arthur Koestler’s wonderful if partisan *The Case of the Midwife Toad* (1971). In *The Science of Life* (1936), Wells, J. Huxley and Wells discuss the olm experiment (omitting Kammerer’s name) but offer a Darwinian explanation (915).
that the blindness of cave-animals was due to their having by chance inherited eye
defects: for in 1923 he produced in my laboratory large specimens of the blind
cave-newt *Proteus anguinus* with fully developed eyes, evolved by exposing the
animals at the proper stage of growth to the action of red light. (901).
Kammerer’s experiment was designed to show—and was interpreted as demonstrating—
that traits can be lost by disuse and gained by use, a basic assumption of Lamarckism.
Though Aldous Huxley shared his brother’s scepticism of Lamarckian evolution, arguing
in 1937 that “the evidence of Lamarckism is extremely inadequate” (*Essays IV.361*), his
political and pedagogical writings of the mid-1930s assigns a crucial role to use-and-
disuse in the development of personality. In *Eyeless in Gaza*, Anthony learns from Miller
that development is canalized and potentiality limited by habit, by repeated action. He
comes to believe, for example, that “old age [is] largely a bad habit…. Behave like an old
man and your body will function like an old man’s, you’ll think and feel as an old man”
(55–56). Once he accepts that “use conditions function” (55), Anthony avails himself of
re-conditioning and metamorphosis.

In terms of expected life trajectories, however, metamorphosis goes against the grain
of expected life trajectories, just as anachrony goes against the grain of the “biological
time” that undergirds the bildungsroman (Bakhtin, *Speech 11*). “Early conditioning,”
Huxley writes in *Ends and Means*, “does not irrevocably and completely determine adult
behaviour; but it does unquestionably make it difficult for individuals to think, feel, and
act otherwise than as they have been taught to do in childhood” (*Essays IV.272*). For
Anthony, this means resisting his “habit of avoiding personal relations” (13). “That
which besets me is indifference,” he writes in his post-conversion diary; “indifference is
a form of sloth” (14) allowing him to stay unchanged, to be “forty-two and fixed, unchangeably himself, brought up along with those critical years of his adolescence” (18).

Crucial in Anthony’s self-diagnosis is his association of habit with linearity and accumulation. In this Huxley follows William James, whose *Principles of Psychology* describes habit as “a series of movements repeated in a certain order tend to unroll themselves with peculiar ease in that order for ever afterward. Number one awakens number two, and that awakens number three, and so on” (I.504). Like James, Huxley in *Eyeless* portrays habit as a sort of abandonment to chronology. When Anthony caresses Helen, he finds in stepwise counting a way to stay uninvolved: “one, two, three, four—counting each movement of his hand…. The gesture was magical, would transport him, if repeated sufficiently often, beyond the past and the future, beyond right and wrong, into the discrete, the self-sufficient, the atomic present … Thirty-two, thirty-three, thirty-four, thirty-five” (*Eyeless* 19). His counting replicates in microcosm his ontogenetic development, “the thirty-five years of his conscious life” (18), and it is counterpointed a few lines later when, travelling to his mother’s funeral, young Anthony counts billboards (“thirty-one … thirty-two”) to dull the pain of his bereavement (19). Equating habit with chronology and contrasting both with the “duty to develop all one’s potentialities—all of them” (*Eyeless* 77), Huxley structures his bildungsroman against the genre’s traditional paralleling of discourse and story. Anthony’s difficult education requires nothing less than a radical break from habitual ways of thinking, acting and developing over time, which required a new way to narrate self-realization. It is significant that Anthony’s conversion leads him to reconsider the “shape” of his work-in-progress: “Worked all
morning,” he notes in his diary on April 5, 1934; “for it would be silly not to put my materials into shape. Into a new shape, of course” (13).

**Anachrony and Self-Cultivation**

*Eyeless in Gaza*’s temporal structure is immediately striking, not least because each chapter begins by listing its day, month and year. For this reason, the novel’s time-shifts are less puzzling than those of, say, *Nostromo*, but they bring their own difficulties nonetheless. For many readers, the relation of discourse to story seems random, despite the thematic and semantic continuities between one chapter’s end and the beginning of the next. The story is divided into five discrete periods (Anthony’s childhood, 1902–1904; youth, 1912–1914; adulthood, 1926–1928; and middle-age, 1931–1935), and the overall pattern is by no means random, as Figure 8 clearly demonstrates. Though episodes from these five periods are intermixed, thus interrupting the sequence, each period is narrated chronologically over the course of the novel. The pattern is by no means random, but, as my comparison with *Great Expectations* reveals, it deviates greatly from the temporal structure of the traditional bildungsroman.

How does anachrony enact Anthony’s self-realization? *Eyeless* finds a formal answer to the problem of habitual character development. Because the bildungsroman equates plot with character, as I argue in the Introduction, disruptions of the genre’s traditional structure are also alternative models of character formation. Thus Anthony can escape Darwin’s one-pointedness and its associations with uneven maturation and, more generally, an inability to inhabit more than one reality at a time (*Essays* IV.387). This process is highlighted in contrast to the plotting of growth in *Great Expectations* (Fig. 8).
Figure 8. Order in the story (chronology) and discourse (chapter number) of two bildungsromans with roughly similar numbers of chapters, covering roughly similar temporal spans: *Great Expectations* (grey triangles) and *Eyeless in Gaza* (black circles). Dickens’ novel exemplifies the typical chronological temporal structure of the genre: story order and discourse order are perfectly correlated. In comparison, Huxley’s novel looks extremely non-linear, though closer inspection reveals a significant similarity: the final chapter is also last in story order, suggesting some loyalty to the *telos* of traditional bildungsromans.

In *Eyeless*, Huxley shuffles the order of Anthony’s life-story, so that no single phase of his life can dominate the plot. To put it numerically: the story spans thirty-three years of his life, but Anthony’s average age in the first five chapters (34.4) is barely less than in the final five (38.8). In *Great Expectations*, which has roughly the same number of chapters and a similar temporal span (28 years), Pip’s average age in the first five chapters (7.0) is distinctly less than in the last five (25.4).\(^67\) Thus, as Robert Baker observes, “formalistic intricacy and polyphonic variations fascinated Huxley and eventually shaped his theory of the novel” (A. Huxley, *Essays* I.xviii).

In *Eyeless*, then, narrative structure resolves a dilemma Huxley’s earlier works merely describe: the problem of living as a unitary being in a multitude of simultaneous realities.

\(^67\) My data are from Jerome Meckier’s “Dating the Action in *Great Expectations.*”
Huxley tackles this problem as early as *Those Barren Leaves* (1925), which grants the disaffected Epicurean Calamy the insight that we human amphibians inhabit a “dozen parallel worlds” (283), but not the ability to unite those worlds. So he concludes “there isn’t any connection…. Universe lies on the top of universe, layer after layer, distinct and separate” (283). Eventually, Calamy capitulates to this pluralistic disconnection by retiring from society to become a hermit, a case study in overspecialization; his exile from sensuality and society is analogous with Darwin’s loss of aesthetics and emotion. Potentially amphibious, he’d rather remain one-pointed than risk the “difficult and laborious” challenge of embracing his many-sidedness (*Essays IV.142*).

Huxley may have endorsed Calamy’s choice when he wrote *Those Barren Leaves*, but if so he had changed his mind for his next novel. *Point Counter Point* definitely sees diversity in the light of possible unification, and its imitation of musical counterpoint attempts stylistically to show multiplicity and unity at the same time. As Huxley explains in a letter to Mary Hutchinson (14 November 1926), he aimed to render “life from many different points of view and to display events and objects existing as they do, in many different ways simultaneously.” Every person, he continues,

> is a mass of organized molecules, a physiology, a part of the social organism…;
> every act he performs can be interpreted in terms of physics and chemistry, of psychology, of morality, of economics, his life can be described in the style of the natural history textbook or in that of *Paradise Lost*. And every aspect is equally “true.” (*Letters I.185*)
Philip Quarles echoes his creator: “the essence of the new way of looking is multiplicity. Multiplicity of eyes and multiplicity of aspects seen…. What I want to do is to look with all those eyes at once” (Point 196). Unlike Calamy, Quarles aims to bridge multiple worlds. Though “trembling on the verge,” however, he is imprisoned by his intellect and falls short of becoming a more complete, social organism. He fails because he focuses on bridging differences not between real people but between the characters of his novel.

Retrospectively, viewed against Huxley’s later fiction, both Calamy and Quarles have failed because they develop some faculties but not others. “Life is a whole,” Huxley writes at the time of Eyeless in Gaza, and “desirable changes in one department will not produce the results anticipated from them, unless they are accompanied by desirable changes in all other departments” (Essays IV.267). People can, he continues, “move away from the territories in which psychological divisions exist, because it is always possible for them, if they so desire, to find in the common world of action the site for a broad, substantial bridge connecting even the most completely incommensurable of psychological universes” (ibid. 274). What Eyeless in Gaza does is suggest a philosophic and formal solution to the incomplete development of characters like Quarles.

The formal distortion to which Huxley submits his bildungsroman is a version of the contrapuntal method of Point Counter Point. The similarity between the two novels is evident in another letter to Hutchinson (25 February 1934), in which Huxley explains his goals in Eyeless in Gaza:

I can’t quite get the formal relations between parts that I’m looking for, but advancing little by little. I am looking for a device to present two epochs of a life simultaneously so as to show their relations with one another—and also their lack
of relationship. For when one considers life one is equally struck by both facts—that one has remained the same and become totally different, that the past conditions the present and that it has no influence upon it. (Letters I.292)

This, again, is the problem of unity and diversity that inspired *Point Counter Point*. Here, however, the problem is aimed at the course of an individual life and not a broad swath of society, and its solution stresses diachrony rather than synchrony. In a novel like *Point Counter Point*, the “reality of unity” is harder to achieve than “the equal reality of division” (*Eyeless* 379) because counterpoint impedes connection by stressing contrast between different characters. To demonstrate its multiple universes, *Point Counter Point* requires a large cast of characters who, in such a crowded narrative, are given little story-time in which to develop. Because Anthony changes over a long story time (thirty-three years), his own biography contains the multiplicity that *Point Counter Point*, with its brief span, distributes among many flat characters. Thus Huxley adapts his contrapuntal style to the conversion narrative, contrasting various moments of a single protagonist’s naïve youth, cynical young adulthood and mature middle-age. The challenge, for *Eyeless in Gaza*, is to ensure that its counterpointed levels blend into unity.

Anthony’s maturation requires juxtaposing different moments in his temporal multiplicity. Similarly, an axolotl’s metamorphosis requires the physical merger of two separate worlds: an ovine hormone merges with an amphibian’s endocrine system. In enacting this juxtaposition, *Eyeless* brings together two of Huxley’s lifelong concerns: pluralism, which he generally addresses technically, by means of counterpoint; and immaturity, a concern he treats, for the most part, thematically, by means of infantile characters. These stylistic and substantive elements combine in anachrony, the primary
formal difference between *Point Counter Point* and *Eyeless in Gaza*, and a device whose use reflects how Anthony reorganizes his self in his quest for unity. In *The Perennial Philosophy*, Huxley argues that for those seeking “the one, divine Reality substantial to the manifold world, … it is only by making psychological and moral experiments that we can discover the intimate nature of mind and its potentialities” (viii–ix). *Eyeless* is just such an experiment.

Huxley’s formal solution to unity and multiplicity is prefigured in “Personality and the Discontinuity of the Mind” (1927). The essay imagines a type of development that rejects *Bildung*’s inherent gradualism and linearity:

The psychological materials out of which the individual must construct his personality are discontinuous in time. In order to create a personality, one must devise an ideal framework in which the naturally discontinuous materials can be harmoniously fitted. Temporal gaps separate the elements of a personality from one another; the framework should span these gulfs of time; the principle of continuity should act as a kind of cement in which the time-divided elements are set. (*Essays II.262*)

In *Eyeless in Gaza*, then, anachrony is the “ideal framework” that allows Huxley to “create a personality” whose wholeness would be compromised and whose shape would be artificially flattened by chronological fidelity:

It is out of such naturally discrete and separate elements that each individual has to build up his personality—to compose it (for the musical metaphor is the more apt)

---

68 Explaining what “the principle of continuity” might involve, Huxley indirectly illuminates the structure of *Eyeless in Gaza*: “The man who would co-ordinate his personality must devise a technique for association-making. Only in this way can he compel the powers, or rather the weaknesses, that make for mental discontinuity to work in the cause of a deliberately chosen continuity” (*Essays II.269*).
so that the discontinuous states may reveal themselves as a part of a whole, developing in time. The most perfect personality is that in which the natural discords are harmonized by some principle of unity, in which the discontinuous psychological elements are fitted into a framework of purposive ideals strong enough to bridge the gaps between them. (Essays II.266)

The “principle of unity” cannot be chronology. In “Time and the Machine” (1936), published the same year as Eyeless in Gaza, Huxley suggests why we need an alternative temporality. “Time is our tyrant” (Essays IV.299), he writes of Western culture, which is dysfunctional largely because “we are chronically aware of the moving minute hand, even of the moving second hand” (ibid. 299). In Eyeless in Gaza, self-realization involves breaking down “the walls” between the “artificial universe” of machine time and “world of nature” and “cosmic time” (ibid. 300). This is yet another version of Huxley’s education of an amphibian. In order to break these walls, Eyeless eschews the bildungsroman’s traditional temporal structure, without yet abandoning faith in Bildung itself.

In the traditional bildungsroman, story is character development. To put it another way, character development is story, which is merely a sequence of events in the order in which they occur. Because the bildungsroman’s story implicitly involves ontogenetic development, Huxley’s use of anachrony implies dissatisfaction with clock time as the primary framework of character composition. His protest against the tyranny of clock-time is typically modernist, as we’ve already seen in my chapters on Joyce and Forster. As Elizabeth Bowen puts it in “Notes on Writing a Novel” (1945), “for the sake of emphasis, time must be falsified”; and yet, she adds, “against this falsification—in fact,
increasing the force of its effect by contrast—a clock should be heard always impassively ticking away at the same speed” (n.p.). It is significant that Eyeless in Gaza so faithfully reminds its readers of story time even as it drastically falsifies it. To Margaret Church, the clock’s inescapable presence is aesthetically unaccountable, a failure on Huxley’s part (“Aldous” 391), but Huxley’s aims in Eyeless are not amenable to Church’s Proustian and Joycean lens. What’s more, a bildungsroman like Eyeless is bound to the body’s growth: it needs time and cannot fully embrace the lyricality of purely thematic, symbolic and otherwise atemporal relations.

Anthony’s counting reflects the novel’s simultaneous chronology, anti-chronology and synchronism: from the chronological “thirty-two, thirty-three, thirty-four, thirty-five” he reverts, in a time-shift going back three decades, to “thirty-one … thirty-two” (19); in the story, the counting is orthodox in its order (31, 32 … 32, 33, 34, 35), though it isn’t in the discourse. As the novel ends, moreover, both linear and non-linear sequences collapse into the achrony of Anthony’s meditation: “one, one, one” (379). By combining these various orders and temporalities, Huxley manages “to compose” Anthony. As a man, Anthony realizes himself in story-time, but we must experience his growth anachronously, as we read from page to page in order to reconstruct that linear realization. The multiplicity of his personality, spanning 33 years of change, is emphasized in the contrasts between textually adjacent but temporally distant episodes. With the date so clearly marked at the beginning of chapters, however, Huxley is stressing rather than suppressing the “clock … always impassively ticking away” (Bowen, “Notes” n.p.). Though Anthony’s conversion occurs late in both story and discourse time (February 7, 1934: Chapter 52), we first encounter him as a convert very
early in the discourse (April 4 and 5, 1934: Chapter 2). This late self contrasts with the
cynic of August 30, 1933 (Chapters 1 and 3) and the sensitive boy of November 6, 1902
(Chapter 4), but together these contrasting moments “reveal themselves as part of a
whole, developing in time” (Essays II.266, my emphasis).

A chronological story implies that maturation is the process of shedding one’s past, a
paradigm consistent with recapitulation and one Huxley evidently rejected. Anachrony
stresses a different kind of coming to maturity, one suggested by Bakhtin in his
discussion of Goethe in Rome. Goethe saw and approved in the city’s architecture “the
visible coexistence of various epochs” (Speech 40), and in this “synchronism” Goethe
recognized “the creative and active nature of time (of the past in the present and of the
present itself), [and] the necessity that penetrates time and links time with space and
different times with one another” (ibid. 41–42). The chronotopic view of Rome warps
chronology, but doing so it uncovers historical realities that underlie present appearances
and promise greater developmental possibilities. A novel blessed with the same vision
would see the world and life “condensed, compacted, and filled with the creative
possibilities of subsequent real emergence and development” (ibid. 50).

A similar vision of time characterizes the divided-self theories of modern psychology,
where unconsciousness weaves the past into the stuff of consciousness. Freud revisits
Goethe’s Roman metaphor in his recapitulatory model of the psyche, in which “all the
ever earlier stages” of life coexist “alongside of the final form” (qtd. in Gould, Ontogeny 157).
For Freud (and Myers, James, Jung, Adler), the past is retained in the present in the form
of conscious and unconscious memories. The resulting model of human psyche is a
chronotope whose topology reflects personal history—but not necessarily its
chronological order. Huxley himself adapts the Goethean metaphor when he describes the amphibiousness of the human mind: “each one of us,” he writes, “is like the population of a town built on the slope of a hill: we exist simultaneously at many different levels” (*Essays III.21*).

Bakhtin’s “synchronism,” like Proust’s theory of memory, suggests that *Eyeless in Gaza*’s anachronous narrative is always concerned with the passage of time but conceives of character development as a discontinuous process. A similar dynamic was emphasized in developmental biology after the heyday of recapitulation. In post-Darwinian biology, organisms are chronotopes: they are literally embodiments of time, of their phylogenetic history. The discovery of heterochrony revealed, however, that this history is not merely recapitulated linearly but, rather, reproduced imperfectly, with idiosyncratic emphases, deletions, accelerations and retardations. A neotenous organism combines adult and juvenile traits; not simply replayed, phylogeny is formally distorted, condensed and concentrated until past history becomes fused in the present organism (Gould, *Ontogeny* 212ff).

The anachrony in *Eyeless* thus shows character developing synchronically. In the first four chapters, as we’ve seen, we see Anthony in three distinct phases of existence. In a discourse time of just 23 pages, this amounts practically to the coexistence of different stages of maturation—especially so early in the narrative, when we are still trying to determine what kind of story we are entering. Having encountered the converted

---

69 This transcendence of time is not metaphysical or ontological (as in *Time Must Have a Stop*); it is psychological, reflecting Huxley’s psycho-biological theory of memory, which, in the mid-1930s, was definitely influenced by Proust, though he aims to take Proustian memory beyond the limits of the individual. Memory, Proust argues, literally holds past events in the present; time past thus coexists with time present, differing, to the perceiving mind, only insofar as past impressions are selected and organised (often unconsciously) while present impressions are still crude, effectively infinite and chaotic. In his final epiphany, Marcel hears his childhood doorbell and recognises that the ringing is not a memory of the sound but the sound itself, retained within him (*Le temps* 440).
Anthony almost from the start, we must, though uncertain about the nature and
circumstances of the conversion, keep it always in mind as we move sequentially (in the
discourse) through the events and actions (in the story) that bring it about. That is, the
open-ended future at the novel’s end is contained, not merely possibly but virtually, in all
of Anthony’s development. His whole developmental trajectory inheres in the early
events (in story time), just as the later ones (in story time) contain and reveal what
Huxley calls “the future of the past” (Essays III.88). A similar use of anachrony has been
analyzed by Genette, who finds in the initial pages of À la recherche du temps perdu “a
vast zigzagging movement starting from some key, strategically dominant position”
(Discours 35). For readers, he argues, anachrony complements “a successive or
diachronic reading” with “a kind of global or synchronic vision” (ibid. 22)—the well-
known spatial topography of modernist fiction, but one, of course, in which time is
visibly inscribed. In a happy ontogenetic metaphor, Genette notes that “this zigzagging
movement” is “itself already contained, like all the rest, in the embryonic cell of the first
six pages” of Proust’s novel. In Eyeless, this “key … position” is Anthony’s mature diary
of 1934–35 (first shown in Chapter 2).

What emerges from this temporal model is a vision of the past that is not gone but,
rather, “buried” (enfoui) (ibid. 33). To take up Genette’s embryological metaphor,
Bildung for Marcel and Anthony is epigenetic rather than preformationist.⁷⁰ though
constrained by the past, their mature form isn’t predetermined. Though Genette finds the
whole narrative “contained” in the beginning—as Kenner also says of A Portrait

⁷⁰ Preformation is “the notion that all major structures of the adult are already preformed in the sex cell”
(Gould, Ontogeny 485), while epigenesis is “the idea that morphological complexity develops gradually
during embryology from simple beginnings in an essentially formless egg” (ibid. 484). Preformationism
was effectively discarded as an embryological model in the early 1800s, but elements of preformationist
thinking survive in, say, Zola’s application of genetic determinism to character behaviour.
Nor is, for Huxley, maturity entirely constrained by childhood. As he revises Wordsworth’s dictum, “though the child is father of the man, the man lives a great deal longer than the child, and ... his forty or fifty years of existence in the world are in incomparably more educative, for evil as well as for good, than are his ten to sixteen years in school” (Essays V.209). Anthony can, if he tries, achieve his latent potential though he is already middle-aged. This point is central to Anthony’s conversion, and it explains his diary’s musings on the Pavlovian notion of “conditioned reflex” (Eyeless 55). Human behaviour is largely reflexes conditioned by habitual repetition, but this is not, as Anthony had once conveniently believed, the “ultimate de-bunking of ... free will, goodness, truth”: conditioning, he comes to believe, “merely restates the doctrine of free will. For if reflexes can be conditioned, then, obviously, they can be re-conditioned” (ibid. 55). Anthony’s Bildung therefore follows his search for “complete knowledge (with the whole mind) of the complete truth: indispensable preliminary condition of any remedial action, any serious attempt at the construction of a genuinely human being” (323, my emphasis).

Through anachrony, the anti-determinism discussed in Anthony’s diary is also enacted formally. Anachrony breaks up the causal chains implied by chronology and inextricable, in traditional bildungsromans, from the protagonist’s growth through

---

71 Of course, this might be said of any novel. Then again, I think that some genre fiction, as well as some film genres like the Hollywood romcom, come close to being so literally predictable.

72 “The truth is that a man is affected, not only by his past, but also by his present and what he foresees of the future. The conditioning process which takes place during childhood does not completely predetermine the behavior of the man. To some extent, at any rate, he can be re-conditioned by the circumstances of his adolescent and adult life; to some extent his will is free, and, if he so chooses and knows the right way to set about it, he can re-condition himself” (Essays IV.266).
experiential accumulation. De-emphasizing chronology, *Eyeless in Gaza* foregrounds another ordering principle: counterpoint, a formal device that highlights non-causal forms of continuity. Stressing affinities, contrasts and changes through juxtaposition and adjacency, counterpoint creates bridges between various aspects of Anthony; it allows the various selves he has inhabited at different stages of his life to coexist, without enforcing the determinism of one moment on the next. As we’ve seen, the end of Chapter 3 finds Anthony counting chronologically—“one, two, three, four…. thirty-two, thirty-three, thirty-four, thirty-five” (19)—in order to abstract himself from Helen as they have sex. The beginning of Chapter 4 finds him counting “thirty-one … thirty-two” (19) in order to forget his mother’s death. The relation is obvious, but it is clearly non-causal: in Chapter 3, Anthony is forty-two, and in Chapter 4 he is eleven.

More accurately, the relation is not causal in the story, though the mere fact of its sequentiality in the discourse encourages the reader to infer a kind of atemporal causation (see Kafalenos’s *Narrative Causality*). The type of narrative generated from the time-shifts is “contextualist,” to use Hayden White’s term: cutting “across the grain of time,” it “shuns ordinary cause-and-effect models” and “allow[s] narrative elements to take on significance only in relation to ‘circumambient’ elements” (qtd. in Spoo 25, 56). Contextualist relations between various episodes of *Eyeless in Gaza* create “a dense network of reflexive associations,” which Jerry Wasserman has helpfully charted (191). Counting as he caresses Helen, Anthony imagines “particles of thought, desire, and feeling moving at random among particles of time, coming into casual contact and as casually parting” (19). The narrative of *Eyeless* suggests he is right, except on one crucial detail: the movement is not random.
Randomness is convenient for Anthony’s pre-conversion sense of self and responsibility, allowing him to see himself as I-less. Unreliably, as the text insists, he formulates a theory of personality that justifies his ethical and social detachment and also deceptively seems to explain the novel’s form. Anthony, whose moral cowardice led to his friend Brian Foxe’s suicide in 1914, wants to believe that he “is simply a succession of states” and that, therefore, “good and evil can be predicated only of states, not of individuals, who in fact don’t exist, except as the places where the states occur” (92). If we are just “formless collections of self-conscious states,” each state separate from the others (93), we are unbound, causally and ethically, from our earlier actions: “What right had the man of 1914,” he asks, absolving himself of Brian’s death, “to commit the man of 1926?” (94). Denying continuity between states, Anthony “gets rid of responsibility and the need for consistency. One’s free as a succession of unconditioned, uncommitted states without past and future” (Eyeless 229). Paradoxically, this I-lessness allows him to remain “unchangeably himself” (18).

Anthony’s theorizing provides one explanation for the novel’s use of anachrony: there is no better way to disprove responsibility, he suggests, than to imagine a model of the self entirely dissociated from time and causality. According to his interpretation of the self, there is no difference between an Anthony whose actions caused Brian’s suicide and an Anthony who performed the same actions “after” Brian’s suicide. In short, his theory of personality seems to be endorsed by the novel’s use of time-shift; critics who interpret the novel in this way inevitably cite the following passage:

[35] In The Perennial Philosophy, Huxley rejects Hume’s definition of personality as “a bundle or collection of different perceptions, which succeed each other with an inconceivable rapidity and are in a perpetual flux and movement” (38); it is dangerous because those who act as if they were “loose and separate” incur not only their own suffering but that of “their fellows” (233).
Somewhere in the mind a lunatic shuffled a pack of snapshots and dealt them out at random, shuffled once more and dealt them out in different order, again and again, indefinitely. There was no chronology. The idiot remembered no distinction between before and after…. The thirty-five years of his conscious life made themselves immediately known to him as a chaos—a pack of snapshots in the hands of a lunatic…. Memory in these cases seemed to be merely a matter of luck. At the time of the event certain participles happened to be in a favourable position. Click! The event found itself caught, indelibly recorded. For no reason whatever. (17–18)

Anthony’s reflection is unreliable, but not only because it is so patently self-serving, as Wasserman argues (190). Its unreliability is evident in its timing (in the story), for it is articulated by a character whose eventual conversion will invalidate his former cynicism. And as he develops his theory, even he can’t help suspecting a hidden logic beneath the randomness he finds so convenient. He tells himself his memories arise “for no reason whatever” but a thought disturbs his smugness: “Unless, it now rather disquietingly occurred to him, unless of course the reason were not before the event, but after it, in what had been the future” (18). Anthony intuits the Bergsonian notion that “the event creates its own retrospective possibility” (Bergson, paraphrased by Worms, L’Évolution 447n15). By this logic, the middle-aged Anthony counts not because he remembers counting when he was eleven; instead, the text remembers him counting as an eleven because it has just shown him doing so at forty-two.

Such future-perfect causality or determinism is evident when Anthony first meets Miller, who inexplicably takes up Anthony’s metaphor of random snapshots: “One takes
the card the conjuror forces on one—the card which one has oneself made it inevitable that he should force on one” (340). By recycling Anthony’s “idiot” (18) as a “conjuror,” Miller endorses Anthony’s non-linear model of shuffled photographs (now reconceived as cards) but rejects his ethical conclusions by insisting the resulting patterns are “a matter of cause and effect” (340). Ultimately, Miller reveals that Anthony’s theory of personality was half-right; rather than suggesting that identity is random and fixed, however, Miller stresses how the will can be used to work with the deterministic and contingent factors that shape our lives. Anthony can—and must—decide to shape his own development. The relationship between anachrony and character in *Eyeless* is therefore more nuanced than Anthony would believe when he suggests that there can be no growth, character or responsibility because “there [is] no chronology” (18).

A crucial nuance involves the nature of anachrony, for there are two distinct kinds at work in *Eyeless*. Both are important, but they shouldn’t be conflated. The most obvious is the time-shifting between chapters. The other occurs within chapters, following the vagaries of memory in a Proustian movement back and forth in time. It is largely because of involuntary memory that Anthony disbelieves his own theory of personality. Memory ignores chronology and causality, working by association; sure enough guilty memories of Brian arise during a casual tryst with Helen, spurring him to worry that “this past of his was becoming importunate” (17). “How I hate old Proust!” he exclaims (9). Though Anthony wants to believe “there’s nothing like a re-creation of the event” (58), memory literally does resurrect the past, and it ensures, by joining temporally-separate events, the continuity of his ethical self. For this reason, Keith May has claimed *Eyeless in Gaza* “is about the moral function of memory” (123) and “the moral psychology of time” (118).
Proustian memory can’t explain the more disruptive and puzzling time-shifts, which characterize the chapter breaks. Unlike the time-shifts of The Good Soldier or À la recherche du temps perdu, which are “‘naturalized’ as the operations of memory” (to quote David Lodge, Art 77), those in Eyeless are brazenly unnaturalized and difficult to attribute to any plausible focalizer. The dates at the top of each chapter jar the smooth transitions we would expect from memorial connections, and they beg the question: who is giving us these temporal markers? The fact that Anthony is absent in several chapters also weakens the case for a structure mimicking individual psychology. How is it that Miller uses the same “random snapshot” metaphor as Anthony? We must suspect the agency of a Ulysses-like “arranger” (Hayman 70), though Huxley would probably have us imagine this arranger as a supra-individual mind.

A super-personal memory offers a good solution to Huxley’s ambivalent attitude towards Proust, who, he believed, had developed an accurate model of the individual mind but failed to apply his insights to self-improvement or social good (Essays II.267–68). Thus Huxley exploits Proustian memory within chapters, but also uses the inter-chapter time-shifts to transcend the boundaries of the self. That such transcendence mattered to him is clear in “Decentralization and Self-government” (1937), another essay concerned with the education of amphibious humans. “Most human beings feel a craving to escape from the cramping limitations of their ego,” he argues, and for most the craving must be satisfied negatively, by taking “the road that leads down from personality to sub-human emotionalism and panic animality” (Essays IV.196–97). They take this path not because they are evil, but because “they do not know how to travel upwards from personality into a region of super-personality” and thus how “to fulfil the ethical,
psychological, and physiological condition of self-transcendence” (ibid. 197). The possibility of accessing super-personal regions recalls Huxley’s thoughts on the potentialities of childhood and the possibility of reclaiming that potential: “angels when we are children,” we grow “increasingly simian” with age; only a few of us know how to “become for a second time something more than human” (Essays II.454).

In Eyeless in Gaza, a “super-personal” psychology would certainly help account for otherwise inexplicable date stamps and instances of textual memory. Not unlike Woolf’s The Waves, Huxley’s novel embeds its personages within a larger textual personality, in which they can achieve “union with what is above personality” (A. Huxley, Essays IV.197). Anthony has inklings of this truth even before his conversion, though, as with Quarles, the insight strikes him only when he thinks about literary characters, not real people. Hamlet, he notes, “inhabited a world whose best psychologist was Polonius.... Polonius and the others assumed as axiomatic that man was a penny whistle with only half a dozen stops. Hamlet knew that, potentially at least, he was a whole symphony orchestra” (91). In a telling moment of clarity, Anthony goes on to exclaim: “To be the only man of one’s age to know what people may be as well as what the conventionally are!” (91, my emphasis). It is hard not to read “one’s age” in its individual as well as historical sense: Hamlet, whom Moretti calls “the first symbolic hero” of our modern culture (Way 3), sees a realm of potential maturity unimaginable to Polonius.

Later, however, Anthony apparently forgets the potentiality he saw latent in Hamlet, and he enlists Shakespeare’s character for his own self-protective theory of personality: Hamlet didn’t have a personality—knew altogether too much to have one. He was conscious of his total experience, atom by atom and instant by instant, and
accepted no guiding principle which would make him choose one set of patterned atoms to represent his personality rather than another. (93)

This passage rearticulates the ethical limitations of Anthony’s immature theory of personality. But it also hints at the higher truth, which he will recognize after his conversion. Anthony recognizes that he “had chosen… Yes, chosen” (380) to see himself merely as a “succession of states” (91–92); he, like his Hamlet, will not “choose one set of patterned atoms to represent his personality rather than another” (93). After his conversion, he recognizes his misdiagnosis of Hamlet and, more significantly, sees his past failure to consider another set of patterns “outside the boundaries” of personality as it is conventionally imagined (91).

It is with this enlightened view that Anthony finally comes to meditate on identical patterns, and identical patternings of patterns. He held the thought of them in his mind, and along with it, the thought of life incessantly moving among the patterns, selecting and rejecting for its own purposes. Life building up simpler into more complex patterns—identically complex through vast ranges of animate being. (378)

The passage is quite abstract, though its theme is unmistakably development—life growing increasingly complex from an initial simplicity. This is, as we’ve seen, the basic theme and structural principle of any bildungsroman. More narrowly relevant to Anthony’s Bildung is the unity that coexists with developmental mutability. This unity is formal: it is in the “patterns.”

In the next paragraph, Anthony shifts from the abstract to the concrete, clarifying the role of pattern in his developmental vision. For this purpose he recruits an old friend:
The sperm enters the egg, the cell divides and divides, to become at last this man, that rat or horse. A cow’s pituitary will make frogs breed out of season. Urine of a pregnant woman bring[s] the mouse on heat. Sheep’s thyroid transforms the axolotl from a gilled larva into an air-breathing salamander, the cretinous dwarf into a well-grown and intelligent human. Between one form of animal life and another, patterns are interchangeable. (378, my emphasis)

Hormones retain their physiological efficacy even when transposed into other bodies, even those of other species. In this biological fact, Anthony discovers that self-realization depends on more than “choos[ing] one set of patterned atoms to represent his personality rather than another” (Eyeless 93). Also needed is the unification of the personal pattern with the “super-personal” patterns (Essays IV.197) of other life-forms. Julian Huxley’s work on amphibian metamorphosis stresses exactly this kind of double attention to both formal pattern and dynamic process: though once content “to establish simple causal mechanisms,” developmental biologists were by the 1920s “think[ing] in terms of processes and relations between processes.” If, Julian adds, “Entwicklungsmechanik, or Developmental Physiology, wishes to become accurate, it must concern itself with the speed and the equilibrium of processes. Time-relations on the one hand, interaction on the other—these are the two chief points with which it must deal” (“Ductless” II.10). These two points are also, under different names, behind the structure of Eyeless in Gaza.

Anthony finally matures when he accepts the paradox of “unity even in diversity” (378). How does his acceptance give him the power of self-determination? An answer lies with William James, one of Huxley’s main influences in matters of psychology and spirituality. Huxley’s model of human amphibiousness echoes James’s view of a
subconscious that “mediates between a number of different points of view” and thus fulfils “one of the duties of the science of religions”: “to keep religion in connection with the rest of science” (Varieties 513). This is surely what Huxley has in mind when he praises James’s notion of the “continuum of cosmic consciousness” (Essays VI.58). For if Huxley was a mystic, his was, like James’s, a mysticism rooted in empiricism. His reality is not ontologically divided into natural and supernatural, but rather perceptually, as with James and his predecessor Myers, into normal and “super-normal” (A. Huxley, Essays III.166). Huxley, as we’ve seen, assumes that universes which seem incommensurable to normal perception are actually linked by supernormal phenomena. It is also James’s conclusion in The Varieties of Religious Experience.

James demonstrates, much better than Huxley, how the link between personal and “super-personal” psychology (Essays IV.197) can be theorized without lapsing into transcendentalism. At the end of The Varieties, he offers an appropriately psycho-physical solution to the paradox of unity and diversity, without denying “the theologian’s contention that the religious man is moved by an external power”:

It is one of the peculiarities of invasions from the subconscious region to take on objective appearances, and to suggest to the Subject an external control. In the religious life the control is felt as “higher”; but since on our hypothesis it is primarily the higher faculties of our own hidden mind which are controlling, the sense of union with the power beyond us is a sense of something, not merely apparently, but literally true. (512–13, my emphasis)
In his naturalistic account of the spiritual, James clarifies how *Eyeless in Gaza*’s two kinds of anachrony might, despite their different psychological causes and narrative functions, represent aspects of a single reality.

James also suggests how anachrony can paradoxically participate in the inherently chronological process of *Bildung*. What makes human minds so amazing to James is the confluence of the conscious and unconscious, whose resulting dynamism can’t be reduced to linear monocausality. Like a small boat on a rough sea, our conscious mental life is continually flooded by unconscious invaders—“imperfect memories, silly jingles, inhibitive timidities, ‘dissolute’ phenomena of various sorts” (*Varieties* 512). This isn’t a metaphysical phenomenon but, as he argues in “Great Men and their Environment” (1880), a “darwinian” one (*Will* 247). A genius’s mind innovates, James argues, by organising materials “originally produced in the shape of random images, fancies, accidental out-births of spontaneous variation in the functional activity of the excessively instable human brain, which the outer environment simply confirms or refutes, adopts or rejects, preserves or destroys,—selects, in short” (*ibid.* 247). This is the very antithesis of habitual thinking, which, as we’ve seen, James equates with repetition and stepwise progression. “Instead of thoughts of concrete things patiently following one another in a beaten track of habitual suggestion,” he argues, “we have the most abrupt cross-cuts and transitions from one idea to another, the most rarefied abstractions and discriminations, the most unheard-of combinations of elements, the subtlest association of analogy” (*ibid.* 248). In this psychological crossing-over, he writes twenty years later, “many of the performances of genius … have their origin; and in our study of conversion, of mystical
experiences, and of prayer, we have seen how striking a part invasions from this region play in the religious life” (Varieties 512).

Applied to religious experience, the same psychological processes generate the “ideal impulses” we ascribe to the “unseen,” “the mystical region, or the supernatural region”; yet, adds James,

the unseen region in question is not merely ideal, for it produces effects in this world. When we commune with it, work is actually done upon our finite personality, for we are turned into new men, and consequences in the way of conduct follow in the natural world upon our regenerative change. (Varieties 516)

Brought to bear on the structure of Eyeless in Gaza, James’s model suggests how form—as a reflection of psychological processes—relates to individual development and induces Anthony’s “regenerative change.”

Huxley highlights the role of active selection in doing good. James observes that the brain generates both “good flashes” and “bad flashes,” and what defines genius is an idiosyncratic and psychologically active “selection” of what flashes are “preserve[d]” and how they are combined into new ideas (Will 250–51). In Ends and Means, Huxley similarly argues that “we cannot hope to think intelligently or to practice the simplest form of ‘recollection’ unless we learn to inhibit irrelevant thoughts” (Essays IV.295).

The immature Anthony sees people as “formless collections of self-conscious states” and

---

74 Heard uses analogies and language remarkably like those of both James and Huxley; for example:

If … the emergent type of advanced consciousness, this sporadic outcrop of men who manage to retain, with full mental stature, the radical originality and freshness of a vigorous child towards every new experience—if these new offers of evolution are accepted and developed, may they not yield the very type of guide for which today our civilization is seeking blindly and with mounting alarm? We know already… that radical, creative hypotheses do not result from specialized accumulation of data.… Creative hypotheses spring from minds which, in a curious way, combine absorption with detachment, interest with wonder. It is this combination which produces the mental explosion, the intellectual ignition, after which the idea is found precipitated. (Man 160, my emphases).
interprets formlessness as a fixed condition, which justifies his aloofness and “what’s-the-good-of-it-all attitude” (*Eyeless* 341). Later he learns to see formlessness as a necessary step in development; next comes the ability “to select a personality out of their total atomic experience,” a personality that will realize “what [he] may be” from the raw material of “what [he] actually is” (*ibid.* 93–94).

By implication, then, the anachronous arrangement of Anthony’s *Bildung* is preparatory to a more directed growth: “the way in which the individual can modify himself” by “choosing something right instead of something wrong” (*Eyeless* 323, 353). What the unconscious—or, alternately, the “lunatic,” “idiot” and “conjurer” (*ibid.* 17, 18, 340)—has thrown up willy-nilly must be sifted and moulded by conscious choice (*Essays* IV.295). After his conversion, Anthony can still agree with his pessimistic friend Mark Staithes that people are mostly subhuman, but he’s learned that they also “may become human. *Homo non nascitur, fit.* Or rather makes himself out of the ready-made elements and potentialities of man” (*Eyeless* 204). If anachrony mimics the potential for metamorphosis but not the active role that Anthony plays in forming his own better self, then Aithal is wrong to claim that the novel’s time-shifting “enacts his final transcendence from the temporal prison of the self” (49, emphasis original). Anthony’s transcendence is, instead, structurally enacted in the novel’s final restoration of chronology. Towards the end, the initially extreme anachrony gives way gradually to an almost chronological sequence. And Anthony’s ultimate choice, the moment of coming-of-age, implies a return to simple sequence, a movement “step by step towards the experience of being no longer wholly separate, but unified at the depths with other lives, with the rest of being” (*Eyeless* 381). *Eyeless in Gaza* retains the story of a
bildungsroman, but by presenting some episodes sooner than the genre would have us expect, its discourse criticizes the genre’s implicit equation of maturity and time. But *Bildung* is still the goal: in the last chapter, story and discourse converge, leaving Anthony to wonder “with serene lucidity … what was in store for him. Whatever it might be, he knew now that all would be well” (382).

Anachrony allows Huxley to show development free, partly, from the temporal dimension. Ontogeny doesn’t simply proceed from immaturity to maturity, just as time doesn’t flow mechanically from past to present. As I argued in Chapter One, Stephen Dedalus ignores a crucial aspect of the novel’s temporal structure when he claims that “the past [is] past” (146). In *Eyeless*, likewise, the past remains present within Anthony, even as he reaches maturity. Indeed, the present is only truly present when it contains the past. Anachrony ensures that Anthony does not merely grow up (i.e., outgrow the past); it continually restores his past selves, so that he becomes enlightened not by transcending the immature aspects of himself but by actively selecting and unifying aspects of his multiplicity. Youth must persist in mature Anthony because maturity is completeness. Fittingly, then, Anthony strives “to be simultaneously dispassionate and not indifferent, serene like an old man and active like a young one” (56). As Julian Huxley writes of the axolotl, “metamorphosis … is an affair of balance” (“Ductless” I.356). In the end, Anthony has balanced his multiple, previously dissociated faculties (206). Our axolotl has metamorphosed.

He metamorphoses thanks to form. Anachrony upsets the bildungsroman’s typically passive correlation of time and ontogeny, just as heterochrony can re-energize an overspecialized lineage, giving it hope against “the dismal conclusion that the
evolutionary clock is running down” (de Beer 94). *Eyeless* activates the correlation by
decoupling ontogeny from time, by differentiating between character development in the
story and in the discourse. Dissociating disparate episodes from their temporal order,
Huxley reveals how individual moments in Anthony’s life relate to one another in ways
that a linear timeline would deform and misrepresent—just as a single linear model
would misrepresent heterochrony. Insofar as they differ from each other, Julian Huxley
argues, “all organic forms … are the result of differential growth” (*Problems* 1): two salamander species can begin life with almost identical morphologies and yet grow up
into such different adults simply because their individual parts grow at relatively
different rates. In *Eyeless in Gaza*, the “stunted yet horribly mature little boys” (71) differ
from “fully-grown human beings” (281) because the ones have overly developed one faculty—usually the sexual or intellectual—while the others have achieved the “proper correlation” (206).

**From Ontogeny to Phylogeny**

*Eyeless in Gaza*’s engagement with the bildungsroman has been called satirical
(Meckier, *Aldous* 144), but its biological engagements suggests a more complex relation
to the genre. Much about it seems to conform to the Bildung plot. It is a portrait of self-
cultivation achieved through a series of tests and preliminary failures, and it links the
hero’s development to his social world. Here *Eyeless* does depart importantly from the
classical model, at least as Moretti conceives it when he claims that nineteenth-century
English bildungsromans offer “one of the most harmonious solutions ever offered to a
dilemma conterminous with modern bourgeois civilization: the conflict between the ideal
of *self-determination* and the equally imperious demands of *socialization***” (Way 15,
original emphasis). The hero neither succumbs to nor escapes from societal norms but, rather, accepts them. Eccentric or anti-social in youth, he finally comes to maturity by submitting to the social order. Questioning such narrative closure is characteristic, argues Castle, of the modernist bildungsroman (23–24).

Anthony’s mature emergence is nothing less than an inversion of the pattern Moretti describes: rather than conform to society, he pledges to re-form the social order in his image (not unlike Stephen with Ireland at the end of Portrait). If, as Bakhtin writes, the bildungsroman represents “man growing in national-historical time” (Speech 25, original emphasis), Huxley disrupts this linear, recapitulatory narrative in order to show a man’s history beyond the national and, by extension, beyond modernity’s most destructive offspring: nationalism (Eyeless 143–44; Essays IV.375). This explains why “patriotic Englishmen” are so offended by Anthony’s pacifism that they threaten his life (376).

Maturity in Eyeless in Gaza means shaping his environment—not being shaped by it.

As Huxley writes in Ends and Means, we are “capable not only of achieving personal enlightenment, but also of helping whole societies to deal with their major problems” (Essays IV.401). For Anthony, this means growing up in order to help other “individual men, women, and children” become “full-grown human beings” (Eyeless 281). The necessary technique, borrowed from F. H. Alexander, involves re-educating or re-conditioning an individual’s habits, those constraining and mindless sets of action that cause character to become hardened and inflexible and therefore, according to William James, maintain social inequities, “sav[ing] the children of fortune from the envious uprisings of the poor” (Principles I.121), by branding individual bodies with the marks of their class, gender and race. The stunted development of a factory worker, in James’s
view, is both a life sentence and a hereditary curse, for habits begin at home: habit “dooms us all to fight out the battle of life”—a fitting Darwinian allusion—“upon the lines of our nurture or our early choices, and to make the best of a pursuit for which we are fitted, because there is no other for which we are fitted, and it is too late to begin again. It keeps different social strata from mixing” (*ibid.* 121). Huxley sees habit in much the same way, but its hold on individual—and therefore societal—development is less inexorable. Huxley’s message is clear: it is possible to induce moral evolution, as long as one facilitates moral, and physical, development throughout the population, individual by individual. Individual reform may require external catalysts, but it must work internally, by encouraging self-conscious and self-willed changes in behaviour.

Here too Huxley’s thinking is consistent with contemporary biology. By shuffling the chronology of Anthony’s growth, *Eyeless in Gaza* mimics neoteny’s power to change evolutionary history through the phenomenon of “clandestine evolution” (Haldane 16) or, as de Beer later called it, “Peter Pan evolution” (Brigandt 320). When somatic development is slowed, as in human and axolotl neoteny, genes once responsible for adult traits are freed and enabled, as it were, to take on new roles. In de Beer’s words, a species undergoing paedomorphosis will find itself in possession of a number of genes whose functions were to control characters which no longer appear, since the old adult characters will be lost in neoteny…. It is, therefore, possible to imagine that these “unemployed” genes are available for new variation. (93) This phylogenetic process has ontogenetic analogues in the developmental flexibility of embryonic cells:
A cell which would normally have undergone specialization to form part of the skin for instance, can be made to turn into part of muscle, or stomach, or nervous system…. As development proceeds, however, the cells and tissues become irreversibly committed to specialization and differentiation, each along its own line, and can no longer alter their prospective fate. (93)

De Beer’s biological narratives are remarkably like those Huxley uses to air his anxieties about and hopes for human development. Huxley was evidently attuned to such thinking as he wrote *Eyeless in Gaza*: in 1937, for example, he argues that “excessive specialization … is always inimical to genuine biological progress” (*Essays* IV.361). In order to achieve “genuine progress…. an organism must advance … along the whole biological front and not with one part of itself (*ibid.* 363). The rejuvenating power of neoteny also recalls Forster’s negentropic genealogies, discussed in Chapter Two. “We do not know,” de Beer writes,

> how energy is built up again in the physical universe; but the analogous process in the domain of organic evolution would seem to be paedomorphism. A race may become rejuvenated by pushing the adult stage of its individuals off from the end of their ontogenies, and such a race may then radiate out in all directions by specializing any of the stages in the ontogenies of its individuals (95)

De Beer imagines evolutionary “rejuvenation” (94) along the same lines as Edward Carpenter’s “reversionary process” (*Angels* 246). Both argue that an apparently retrogressive movement (de Beer’s neoteny, Carpenter’s Return to Nature) can mitigate the dangers of unidirectional progress and specialization. Neoteny, Stebbins writes in
Darwin to DNA, Molecules to Humanity, provides an “‘escape hatch’ from overspecialization” (122), a springboard to evolutionary novelty.

The same formal devices that induce Anthony’s metamorphosis (as it were) also allow him to spur self-improvement in others. The most important figure in this respect is Helen Ledgewige, the first person Anthony truly learns to love (Eyeless 97). Indeed, she enjoys so much narrative attention—featuring in her own network of chapters, her own system of motifs and associations—that it’s unfair to think of Eyeless in Gaza in terms of Anthony’s Bildung alone. Helen’s primary narrative function is, as May argues (127–29), to provide a contrast with Anthony; he becomes a pacifist, she a bloodthirsty communist. But she also contributes to Anthony’s development. Major events in Anthony’s life tend to be catalyzed by Helen. To name just a few: his trip to Mexico, where he meets Miller, is spurred by a chance encounter with Helen (292–95); his conversion is prefigured in his spontaneous and inexplicable empathy for her (97–98); and his final, courageous choice to deliver his lecture in the face of physical dangers follows a debate with her.

The influence is reciprocal: formative events in Helen’s life almost all involve Anthony. It would be fair to say that Eyeless in Gaza’s structure really reflects Anthony’s development in mutual interaction with Helen’s. She triggers the cascade of Anthony’s Proustian memories that, like a fugue’s exposition, introduces key motifs and themes and also ensures that his voice or key is contrasted and complemented by her contrapuntal answer. In the last chapter, most significantly, Helen wavers in her commitment to political violence and seems ready to follow Anthony’s path to pacifism and enlightenment (375). Though the novel ends before we learn her choice, her very willingness to entertain Anthony’s ideas signals a major change of heart.
The anachronous structure of *Eyeless in Gaza* acts on Anthony’s development like a thyroid diet on an axolotl, with both individual and social results. Meditating, Anthony remembers that “sheep’s thyroid transforms the axolotl from a gilled larva into an air-breathing salamander, the cretinous dwarf into a well-grown and intelligent human being” (*Eyeless* 378). A few lines later, this once “cretinous dwarf” re-conceives of individual metamorphosis as a form of social change. The miraculous effect of thyroid, Anthony realizes, is a molecular analogue of the emotions humans share: “The mental pattern of love can be transferred from one mind to another and still retain its virtue, just as the physical pattern of a hormone can be transferred, with all its effectiveness, from one body to another” (*Eyeless* 379). Huxley blends physiological processes with emotional attachments, biological transmission with cultural communication, the biosphere with “the noösphere, the world of mind” (J. Huxley, *Evolution in Action* 96). This is, for Huxley, more than analogy: it is a true homology. The hormone and “the mental pattern of love” seem essentially different because the one is perceptible to our senses, the other only to our intuition and emotions; but really they are different aspects of one reality. His conversion occurs when he acknowledges that he is committed to others, to the super-personal, “as a hand is committed to the arm” (377). This is the way to bridge the gulf between his ontogeny and progressive evolution.

“Love and understanding,” writes Huxley in *Ends and Means*,

are valuable even on the biological level. Hatred, unawareness, stupidity, and all that makes for increase in separateness are the qualities that, as a matter of historical fact, have led either to the extinction of a species, or to its becoming a living fossil, incapable of making further biological progress. (*Essays IV.388*)
This passage is striking because it matches the opinions of contemporary Darwinists like Haldane (cited in the same essay; ibid. 361) and, of course, Julian Huxley; because it sheds much light on the fate or condition of many characters in Aldous’s fiction; and because it echoes Anthony’s biological meditations at the end of *Eyeless* (378). Most remarkable, though, is the fact that *this*, a discussion of biology, is how Huxley chooses to close the book’s penultimate essay, on “Beliefs.” It is thus in a distinctly biological context that he retrospectively frames the preceding chapters (“The Planned Society,” “Individual Work for Reform,” “Education”—to list a few, in order), and with a biological mindset that he embarks on the final essay: “Ethics.”

**Conclusion**

Huxley’s biological concerns in *Eyeless in Gaza* and *Ends and Means* neatly echo the end of *Embryos and Ancestors*, where de Beer triumphantly sounds the death-knell for recapitulation theory:

> freed from the trammels and fetters which have so long confined thought, the whole of the animal kingdom may appear in a new light, more homogeneous and compact than had been imagined, and with the gaps between its major groups less formidable and perhaps even bridgeable. (142)

With the help of heterochrony, de Beer rewrites the narrative of animal evolution. Divested of recapitulation’s reductive, linear model of ontogeny and phylogeny, he sees a way to bridge “the gaps” separating extant species, a problem for evolutionary theory even since Darwin. “Looking not to any one time, but to all time,” writes Darwin,
numberless intermediate varieties, linking most closely all the species of the same
group together, must assuredly have existed; but the very process of natural
selection constantly tends, as has been so often remarked, to exterminate the parent
forms and the intermediate links. Consequently evidence of their former existence
could be found only amongst fossil remains, which are preserved … in an
extremely imperfect and intermittent record. (Origin 179)

Somewhat recklessly, de Beer solves the problem of missing links by positing
“clandestine evolution” (Haldane 16), which helps explain apparently sudden changes in
the fossil record without abandoning Darwinian gradualism. As its name suggests,
clandestine evolution is merely an illusion of abrupt phylogenetic change: because
juvenile stages are usually soft and therefore unlikely to be fossilized, evolutionary
novelties that appear in early ontogeny seem to appear suddenly in the fossil record once
neoteny (which involves relatively minor changes in developmental timing) pushes
juvenile features into adulthood (Haldane 16; Gould, Ontogeny 480).

One of the boldest proponents of clandestine evolution was Walter Garstang, who
held neoteny responsible for the most dramatic evolutionary novelties, including the
evolution of vertebrates and, by extension, humans. In 1894, Garstang suggested a shared
common ancestor for Echinoderms (starfishes and sea-urchins) and vertebrates. As odd
as the proposition seems, it rests on evident similarities between larval echinoderms and
mature vertebrates. By 1926, he had refined his model to include a key role for neoteny.
In the revised hypothesis, vertebrates share a common ancestor with sea-squirts, whose
adults are sessile and effectively brainless but whose larvae are active swimmers; the
vertebrate lineage arose in our common ancestor when neoteny produced free-swimming,
sexually mature adults, able to exploit a huge range of previously inaccessible environments and therefore evolve in multiple directions (Garstang and Garstang 85–86).

There are clear affinities between clandestine evolution and Huxley’s theories of personal growth, specialization and social change. No wonder he has Anthony turn his mind to the miracle of the “sheep’s thyroid transform[ing] the axolotl from a gilled larva into an air-breathing salamander” (378): it is as if he suddenly recognized in neoteny the promise of true progress, whereas recapitulation, whose assumptions are built right into the bildungsroman’s linear structure, could only see neoteny as a pathology. How fitting, then, that Garstang and Garstang point to “the Perennibranchiate Amphibia,” which include axolotls and Proteus, as support for their contention that “the recognised examples of recapitulation do not justify generalisation into a universal ‘law’” (82).

Let’s return once more to Eyeless in Gaza’s structure. In his definitive attack on recapitulation in 1921, Garstang proclaims that “ontogeny is not an animated cinema show of ancestral portraits” (“Theory” 100): it does not simply replay the steps of phylogenetic history in order, like the sequential images on a film strip. But film—or film editing—also supplies good analogies for heterochrony that Huxley seems to intuit. In “Where Are the Movies Going?” (1925), he argues that film promises new ways to tell new kinds of stories, though he doesn’t suggest any links with biology. He contrasts the tired techniques of fiction with “the most pregnant potentialities of the cinema” (Essays I.175). Literature, he notes, works with “traditional and hereditary things, impregnated by centuries of use,” but film can “dissociate long-united ideas, or bring together ideas which have never previously been joined” (ibid. I.175).
This is exactly what Huxley does with counterpoint and anachrony in *Eyeless in Gaza*, a most untraditional bildungsroman. Huxley, at least, saw hope in the axolotl’s neoteny and inducible metamorphosis. Mimicking neoteny and metamorphosis in its structure, *Eyeless* therefore reflects a distinction noted by Julian in 1923:

The physiology of development is quite different from the physiology of adult life, since the latter is mainly concerned with the regulation of the functions of the body so that they do not depart beyond certain limits from the normal. Developmental Physiology, on the other hand, is concerned, not with constancy, but with change; during development continually new structures and functions are appearing, each phase proceeding to a point at which it resolves itself into a new and qualitatively different phase. (“Ductless” II.10, my emphases)

Though Julian cautions against applying such conclusions to human development (*ibid.* 11), his brother Aldous could enjoy more poetic license: *his* axolotl can become “a well-developed and intelligent human being” (*Eyeless* 378).
CHAPTER FOUR

THE BOOK ADAPTED TO THE BODY: WOOLF’S ORLANDO AS BILDUNGSROMAN AND FICTION THÉORIQUE

I recognise … another instance of the growth of the “great oak” from the little acorn; since What Maisie Knew is at least a tree that spreads beyond any provision its small germ might on a first handling have appeared likely to make for it.

—Henry James, “Preface to What Maisie Knew” (Art 140).

The novel was the famous Quercus…. Its protagonist was an oak. The novel was the biography of that oak…. Employing the gradual development of the tree …, the author unfolded all the historic events—or shadows of events—of which the oak could have been a witness.

—Vladimir Nabokov, Invitation to a Beheading (122)

Nature has added another element likely to disorder a symmetrical development.

—Virginia Woolf, “Thomas Hardy’s Novels” ( Essays IV.509)

“What is the shape of a life?” asks Michael Levenson in his study of A Portrait of the Artist (“Stephen” 1021). In my own reading of Portrait, I argued that the shape of Stephen’s life, his developmental trajectory, is forced out of the Bildung plot’s linear progression by repeated reversions into deep time. And I asked the same question of Howards End and Eyeless in Gaza, the latter undoubtedly the limit case of how biological theories deform the plot of the traditional bildungsroman. In this final chapter, I ask it of Orlando, Woolf’s fascinating portrait of an artist as a young man-turned-woman, whose sex-change is, as the narrator says, a matter for “biologists and psychologists [to] determine” (139).

It is to expand the possibilities of the traditional life story that Woolf embeds a “great variety of selves” (309) into the structure of a bildungsroman. The genre’s predictable sequence is both confirmed and strained by Orlando’s strange and multivariate development. On one hand, Orlando grows up as a Künstlerroman would demand: like the elevator she rides near the end, she moves “smoothly upwards” (300) towards artistic realization, the publication and immediate success of her poem, The Oak Tree. On the
other hand, “the lift g[ives] a little jerk” (300): Orlando’s growth is a series of false starts, and like a modern-day Rasselas she successively tries out and abandons fashions and ways of life. On the third hand (since we’re dealing with unusual development), Orlando doesn’t develop at all: by the end of the novel we learn that “through all these changes she had remained … fundamentally the same” (237). In short, Orlando incarnates the modernist bildungsroman’s break from what Woolf deems, in her review of *Aspects of the Novel*, “the plausible but preposterous formulas which are still supposed to represent life, love and other human adventures” (*Essays IV.463*).

Despite *Orlando*’s fantastical content, its portrait of development and sexual identity coincides fascinatingly with discoveries in modern genetics and developmental biology. As Jean-Jacques Mayoux notes in a 1930 review, Woolf’s reflection that the sexes “intermix” (*Orlando* 189) expresses “the very opinions of contemporary biology” (Mayoux 119). Sex determination and sex-change were much on the minds of early geneticists. In the 1920s, Richard Goldschmidt found that crossing different varieties of gipsy moth (*Lymantria dispar*) results in offspring that change sex; according to R. Ruggles Gates in 1921, this discovery launched one of “the most active lines of work” in genetics and sexual physiology (571). Gavin de Beer, the champion of heterochrony, reports that “the relative speeds at which two sets of genes produce their effects” can result in “intersexes, and [that] a series of degrees of intersexuality can be established, from very slight to complete sex-reversal” (18). The interest in “intersexes, gynandromorphs, and other sex-monstrosities,” as Bateson calls them (“Determination” 720), represents an intriguing overlap between biology and modernist literature, both of them engaged in questioning and re-conceiving traditional notions of sex and gender.
Given Woolf’s love of Lepidoptera and her social acquaintance with biologists working on sex-change (Julian Huxley and Haldane), she may well have known about the gipsy moth’s remarkable biology.\(^{75}\)

Orlando’s sex-change reflects Woolf’s well-known personal, aesthetic and political interest in gender, so it tends to overshadow Orlando’s equally fantastical longevity and enduring youth. But these too reveal links between biology to the modernist bildungsroman, particularly its trope of endless youth and its ambivalence about “growing up—which is not necessarily growing better” (*Orlando* 282). Like Anthony Beavis, Orlando is neotenous: “she was like a child,” the narrator notes, sarcastically echoing Lord Chesterfield’s assertion that “[w]omen are but children of a larger growth” (*ibid.* 213); but sarcasm doesn’t change the fact that after 358 years, Orlando is just “thirty-six” and “scarcely look[s] a day older” (302). Extended youth, coinciding with Orlando’s repeatedly changing lifestyles and poetic style, undermines the linear, cumulative model of development that she endorses as she walks “among the tombs where the bones of her ancestors lay” (174), thinking “‘I am growing up’” (175).

Surveying “the progress of her own self along her own past,” however, Orlando realises that her experience, embodied in “twenty-six volumes” of poetry (175), does not reflect a straightforward or teleological progression: “she was only in process of fabrication. What the future might bring, Heaven only knew. Change was incessant, and change perhaps would never cease” (175–76).

\(^{75}\) Another intriguing connection: the sex-change described above resulted from crosses of “European ♀ x Japanese ♂” (Bateson, “Determination” 719), while that of Orlando is likewise orientalized (it takes place during his stay in Turkey—see Karen Lawrence’s “Orlando’s Voyage Out”). That these experiments were conducted on gipsy moths might also inform the fact that the sex-change occurs at a time when Orlando “must have been in secret communication” (141) with “the gipsy tribe to which Orlando had allied herself” (140). Lepidoptera were dear enough to Woolf for her to call Vita Sackville-West “an Emperor moth” to her own “weevil” (*Letters* III.243 [March 1\(^6\), 1926].
Orlando’s longevity is a way out of the two profoundly compromised endings that, according to Gillian Beer, Lorna Ellis and others, await the protagonist of a female bildungsromans: dying young or “becom[ing] vessels of descent, not borne aloft by the boat that carries them, but themselves bearing and carrying: child-bearing” (Beer, Woolf 14). Such are the respective fates of, among many others, Tess Durbeyfield and Jane Eyre. Only by dying, argues Beer, can Rachel Vinrace in *The Voyage Out* escape a developmental plot whose *telos* could only be marriage and procreation. In modernist bildungsromans, female protagonists often elude such endings by deviating from the ideals of development. In Rose Macaulay’s *Told by an Idiot* (1923), Imogen Carrington is still at nineteen like “a child in the nursery” (267), more interested in games and adventure than marriage. Imogen’s stalled development and refusal to reproduce disrupt not only *Bildung* but also, because she is the focal character in a family saga, genealogy and narrative continuity. Her tomboy infantilism refuses to heed the genealogical imperative inscribed in our social, legal and even narrative and grammatical structures—the very structures Woolf attacks in *A Room of One’s Own*.

In *Orlando*, Woolf finds a way to eschew the compromise of traditional female development by having it both ways: her protagonist’s ontogeny is stretched over such a long period that she can mature enough to publish her life’s work, *The Oak Tree*, without sacrificing her ability to bear a child (295). Nor does bearing a son sacrifice Orlando to the genealogical imperative, for it occurs so out of the blue, and with such negligible effect on the plot, that it exposes rather than enforces patriarchal and filiative grand narratives. The boy’s birth, moreover, happens so late in Orlando’s life that she can

---

76 See Esty for a complementary account of Rachel’s “arrested development” and death (132).
hardly be said to have foregone experience of her own: indeed, Orlando has had world
enough and time to be a profligate youth, a responsible diplomat, an exile among the
gipsies, a socialite among the likes of Dryden and Pope, a poet and a grand lady. In this
way Orlando illustrates the novelty Woolf ascribes, in A Room of One’s Own, to Mary
Carmichael’s Life’s Adventure. What Woolf finds so new and daring about this
(fictitious) novel is that the character Olivia, in addition to being friend and scientific
colleague of Chloe, can also “go home to her children” (91). For Orlando, reproduction is
not “the beginning of death” (Joyce, Portrait 230).

Orlando’s sex-change and neoteny participate in Woolf’s travesty of recapitulatory
Bildung, for they help flesh out the novel’s distinctly modernist treatment of time and
identity, as I will discuss shortly. A related subversion is evident in the novel’s parodies
of historical periodization, which were, according to Jane de Gay, “a key organising
feature of Victorian historical discourse” (63). Instead of representing history as a
continuous linear movement from sixteenth to twentieth century, Woolf emphasizes
discontinuous series linking together the Renaissance, the Enlightenment and “the
present moment” (298). Her history is more pendulum than steady advance, and because
Orlando is comically susceptible to “the spirit of the age” (236), her development as a
character and as a writer is likewise fitful. Orlando subverts the periodization and
linearity of history and development alike, much as biology had undermined the view of
ontogeny as a linear progress through distinct phylogenetic stages. Traditionally, the
bildungsroman ends by harmonizing individual desire with societal responsibility

---

77 For a careful analysis of Woolf’s strategic creative re-writing of Mary Stopes’s Love’s Creation, see
Alt’s Virginia Woolf and the Study of Nature (114–27). Woolf signals the connection between Orlando and
A Room of One’s Own by casting Nick Greene as a Mephistopheles to both Orlando (Orlando 281) and
Judith Shakespeare (Room 54).
(Moretti, Way 118), but Orlando’s nonlinearity achieves this closure too soon and too unconventionally: occurring halfway through the novel, Orlando’s promotion to diplomat marks the end of his development, but only insofar as it is his development—his formation as a male. Re-born as a woman, Orlando begins her development anew, even as she also builds on her past. Even the direction of Orlando’s sex-change—from male to female—undermines recapitulation theory, which was widely used to support the theory that women fall, developmentally, somewhere between children and men (Gould, *Ontogeny* 129–30; cf. Woolf, *Orlando* 213).

More broadly, the novel questions any model of development in which our younger selves are transcended in order to reach maturity or enlightenment. Orlando’s memory accesses a living past that is, as de Gay puts it, “represented spatially rather than temporally, so that it still exists to be viewed from the present”; thus “Woolf attacks history as a discourse that kills off the past” (66) and, by implication, attacks recapitulation theory—in which new stages supersede old. Like Portrait and Eyeless in Gaza, Orlando posits the simultaneous coexistence of “these selves of which we are built up, one on top of another, as plates are piled on a waiter’s hand…; for everybody can multiply from his own experience the different terms which his different selves have made with him” (307–08). Multiple selfhood is, of course, a notion Woolf highlights in order to “br[eak] the sequence” of patriarchal narrative, as she puts it in *A Room of One’s Own* (88). “The truth,” she writes in Orlando, “is that when we write of a woman, everything is out of place—culminations and perorations; the accent never falls where it does with a man” (312, my emphasis). So Woolf rescues the now-female Orlando from the traditional Bildung plot. But, as the italicized allusion to “Modern Fiction” suggests,
Woolf’s mandate extends beyond writing “of a woman” to include writing as a Georgian, a modernist.

Orlando’s life guides—or, rather, is—the novel’s narrative, both its content and its structure; in this sense Orlando is a bildungsroman. And as I have outlined, the oddities of its Bildung plot are plausibly related to discussions in contemporary biology. But the relation is more circumstantial than in Portrait, Howards End and Eyeless in Gaza; textual confirmation of a biological structure—like Joyce’s “law of heredity” (Portrait 230), Forster’s “throw back” (320), Huxley’s “axolotl” (Eyeless 378)—is lacking in Orlando. Woolf’s novel provides a different and, in a sense, deeper view onto the modernist bildungsroman and biology. So what interests me especially about Orlando is not that it, like Howards End, Portrait and Eyeless in Gaza, reconceives Bildung by manipulating the parallel between ontogeny and phylogeny—though it does. Like “Oxen of the Sun,” which it resembles in several ways, Orlando is “a freak” (Woolf, qtd. in Boehm 192) whose eccentricities highlight through exaggeration key aspects of the modernist bildungsroman and, more generally, modernist understandings of prose fiction. Unlike “Oxen,” Orlando openly theorizes itself, asking readers to heed the ways in which narrative, as much as gender and self, is constructed. Of Woolf’s novels, Orlando is the most metafictional, a counterpart to her theoretical writings of the same period, especially “How Should One Read a Book?” (1926), “The New Biography” (1927) and A Room of One’s Own (1929). It is what Nicole Brossard calls fiction théorique (or theory-fiction), in which storytelling is supplemented, even interrupted by theorizing.78

78 Brossard offers fiction théorique as a necessary feminist intervention in the patriarchal structures of language and fiction more generally. It requires explicit theorizing within a fictional narrative, “a theory,” as Brossard puts it, “working its way through syntax, language and even narrative of a female as subject, a fiction in which theory is woven into the texture of the creation, eliminating or trying to, distinctions
Through metafiction, writes Beth Boehm, “Woolf lays bare the methods she will employ to revise our expectations” (199). Boehm is writing about our expectations of fact and fiction, but her statement would apply equally to our ideas of what a novel is, how it is constructed and how its construction reflects or resists the inescapably patrilineal tradition of fiction. Orlando therefore confronts the traditional female bildungsroman, with its possibilities of closure either in death or in marriage and motherhood, on two levels. As narrative, it conforms to the traditional plot in such a casual manner that Orlando’s marriage and procreation can only be parodic and subversive. As metafiction, Orlando’s very existence signals the successful artistic achievement of a woman (Woolf). This achievement, as Woolf argues in A Room of One’s Own, was denied to Judith Shakespeare, who despite having “Shakespeare’s genius” could, as “a woman in Shakespeare’s day,” have ended only in an unhappy marriage, artistic frustration and suicide (Room 54). The two levels, the narration and the metafiction, are of course inextricably fused in the central character of Orlando, who is both protagonist and successful female author.

The modernist bildungsroman innovates by manipulating the parallel between two biological plots, the ontogenetic and the phylogenetic. As both bildungsroman and fiction théorique, Orlando foregrounds its manipulations and so explicitly critiques the ideologies I link to recapitulation theory. Its significance for this study of biology and the modernist bildungsroman is this: by self-consciously representing the shape of a life as

between genres, between prose, essay, poetry, between fiction and theory” (qtd. in Teslenko 66). Orlando and A Room of One’s Own clearly fit this formulation. Jane de Gay makes a related case for Orlando when she calls the novel a fictionalization of Woolf’s theories of history and commitment to uncovering and participating in a female literary tradition (62–63).

Kathryn Benzel offers a related reading of Orlando’s function as both mimetic and metafictional text. To a more limited extent, Huxley performs a similarly metafictional feat in those diary sections of Eyeless in Gaza that pertain to development, time and immaturity.
an organic process (but one sceptical of the linear, teleological organicism of Herder and Haeckel), it reveals how and why the modernist bildungsroman remains a vital genre even as its inherited philosophical, aesthetic and structural affinities with recapitulation give way to more complex, non-linear models of development and evolution.

Specifically, by pairing an oak tree with the poem The Oak Tree, Orlando self-consciously reveals, engages and complicates the organicism native to the Bildung plot; and because this organicism is what fundamentally links the genre to biology, Orlando invaluably exposes the underlying general (and generic) biological basis for the specific innovations we saw in Joyce, Forster and Huxley. Focusing on organicism also highlights the special relevance of developmental narratives for contemporary theories of the novel; as a specialized form of the novel it is particularly good at foregrounding the organicist bent in contemporary criticism, especially the beginnings of the formal criticism we now call narratology. Concretizing two of Orlando’s many selves, the oak tree and The Oak Tree offer a clear metafictional view into a syndrome of the dualities that supply the central tensions of the modernist bildungsroman and prose fiction more generally: the dualities of “on the clock and time in the mind” (Orlando 98), story and discourse, prosaic and lyric, conjunctive and disjunctive, ontogenetic growth and subtler, less linear kinds of development—in short, the very dualities that the modernist bildungsroman foregrounds with a little help from biology.

**Orlando as Metafiction and Fiction Théorique**

What makes Orlando unusual among the novels I’ve examined is its self-conscious negotiation of how the novel might give shape to a life. To this end, the novel deploys
two metafictional devices in order to comment on its own construction. The first is Orlando’s struggle to compose *The Oak Tree*, a microcosm of the novel as a whole. Inspired by a growing tree, it advertises the novel’s engagement with philosophic and aesthetic organicism that is articulated in the notion of *Bildung* and the structure of the bildungsroman, as well as in recapitulation theory\(^{80}\) and many modernist theories of fiction. This brings us to the second metafictional device, which parallels the homodiegetic composition of *The Oak Tree* with a heterodiegetic narrator who comments on the composition of *Orlando*. As a biographer, the narrator is self-consciously involved in representing the shape of Orlando’s life, with which the poem is symbolically and structurally equated.

In a sense, *The Oak Tree* is Orlando, whose unusual development is mirrored in the poem’s extended process of composition, deletion and revision. Adapting to the literary fashions of four centuries, the poem’s growth is literally “the development of her soul” (176). Given the bildungsroman’s equation of character development and plot development, the poem is likewise a double of the novel. More than that, *The Oak Tree*, or rather a future version of it, is *Orlando*. Its ongoing composition makes *Orlando* a “self-begetting novel” (as Kellman terms metafictional novels about their own genesis). *Orlando*’s metafictionality would therefore verge on the *mise-en-abyme*, the poem “yield[ing] knowledge of the text itself by modeling its form” (McHale 178). I’m not suggesting the poem recapitulates the novel in the same way that, say, “The Mouse Trap” does the intrigue of *Hamlet*; I’m proposing that the process by which the poem is shown

---

\(^{80}\) Though recapitulation theory reached its apogee through Haeckel in the late nineteenth century, it originated as a modern biological theory among the same Weimar theorists who theorized *Bildung* as an aesthetic and cultural concepts and, in the case of Goethe, wrote the earliest bildungsromans (see Gould 35–36).
to change over time reflects how the character of Orlando and the plot of *Orlando*
develop. It is, however, suggestive that Orlando decides not to bury the published book
of her poem, as if keeping it, like her own life, open to further revision—that is,
potentially open to reformulation in the more flexible medium of prose. To Woolf’s
thinking, the novel is the only form expansive and adaptable enough to render Orlando’s
“thousand odd, disconnected fragments” (78). The narrator hints as much when she
describes “something intricate and many-chambered” in Orlando, something “which one
must take a torch to explore, in prose not verse” (175). On this point, Woolf is even more
emphatic in “Poetry, Fiction and the Future” (1927):

> for our generation and the generation that is coming the lyric cry of ecstasy or
despair which is so intense, so personal and so limited, is not enough. The mind is
full of monstrous, hybrid, unmanageable emotions. That the age of the earth is
3,000,000,000 years; that human life lasts but a second; that the capacity of the
human mind is nevertheless boundless; that life is infinitely beautiful yet repulsive;
that one’s fellow creatures are adorable but disgusting; that science and religion
have between them destroyed belief; that all bonds of union seem broken, yet some
control must exist—it is in this atmosphere of doubt and conflict that writers have
now to create, and the fine fabric of a lyric is no more fitted to contain this point of
view than a rose leaf to envelop the rugged immensity of a rock. ([*Essays* IV.429–
30]

The lyric cannot “take the mould of that queer conglomeration of incongruous things—
the modern mind,” but the novel, “the democratic art of prose … is so humble that it can
go anywhere; no place is too low, too sordid, or too mean for it to enter” (*ibid.* 436). The
novel is not an alternative to poetry or drama: it is a metaform capable of integrating and combining all other forms, which is what makes it so congenial with the modern world. It is, as Woolf writes, a “cannibal” (ibid. 435), which consumes and refracts the organic matter of old poetry—“the rose, the nightingale” (ibid. 436)—as well as the prosaic, built-up city where “the long avenue of brick is cut up into boxes, each of which is inhabited by a different human being who has put locks on his doors and bolts on his windows to insure some privacy, yet is linked to his fellows by wires which pass overhead” (ibid. 432). Able to consume and anabolically combine more or less anything the “cannibal” novel allows elements usually thought to be contradictory to coexist. In Orlando and in modernist bildungsromans more generally, this coexistence is particularly important in the case of time, for novels can—and that Orlando does—accommodate the multiplicity of time from geological ages to the relative shortness of “human life” and the infinite temporalities of “the human mind.” These are three crucial scales at play in the modernist bildungsroman, as I have shown throughout this study: the first phylogenetic, the second ontogenetic and the third, practically free from biological constraint and yet an outgrowth of biological processes, psychological.

Though Orlando persists in writing poetry, her life is, of course, given in the novelistic form of Orlando. The multiplicity of self and mind is, in the passage above, linked to the multiplicity of time, which is most evident in the contrast between clock-time and the experience of time. Here as in Orlando, the temporal duality is paralleled by the duality of softness and organicism (“rose leaf”) on one hand and hardness and inorganicism (“a rock”) on the other. Both contrasts reflect on Orlando’s development, even as the
firmness of the oppositions are deconstructed into a new, modernist organicism that encompasses both hardness and softness.

The soft-hard distinction is a concretization of its temporal analogue, the distinction between time and its subjective experience that illustrates Orlando’s status as a modernist bildungsroman engaged against the idea of recapitulation. Early on, Orlando experiences the plasticity of time: his “whole past, which seemed to him of extreme length and variety, rushed into the falling second, swelled it a dozen times its natural size, coloured it a thousand tints, and filled it with all the odds and ends in the universe” (99). This alternately dilating and contracting time is of an entirely different nature from the linear time of recapitulation, which, in Flush, unfurls suddenly when the young spaniel is confronted with the smell of prey, “a smell that ripped across his brain stirring a thousand instincts, releasing a million memories” or that of a mate, which “summoned wilder and stronger emotions that transcended memory and obliterated grass, trees, hare, rabbit, fox in one wild shout of ecstasy” (13). Beside this parody of race-memory, Orlando’s treatment of time and mind is distinctly non-linear and, with its mock precision, unscientific: “if there are (at a venture) seventy-six different times all ticking in the mind at once, how many different people are there not—Heaven help us—all having lodgment at one time or another in the human spirit? Some say two thousand and fifty-two” (308). Such moments, common in Woolf’s work, dismantle the linearity of time and, by implication, the unidirectional narrative of recapitulation so clearly unrolled before us in Flush.

If Orlando is a bildungsroman that defies the genre’s linear structure, it is largely because time is so variously embodied in Orlando. “Time,” the narrator writes,
though it makes animals and vegetables bloom and fade with amazing punctuality, has no such simple effect upon the mind of man. The mind of man, moreover, works with equal strangeness upon the body of time. An hour, once it lodges in the queer element of the human spirit, may be stretched to fifty or a hundred times its clock length; on the other hand, an hour may be accurately represented on the timepiece of the mind by one second. This extraordinary discrepancy between time on the clock and time in the mind is less known than it should be and deserves fuller investigation. (98)

This discrepancy is exactly what *Orlando*, as a modernist bildungsroman, enacts and self-consciously reflects upon. And it is as a novel, not as the sober, empirical biography it purports to be, that the investigation can hope to succeed. An individual’s experience of time is the stuff of fiction, for it is inaccessible to the empirical methods of traditional biography.81 Or, as Max Saunders’ more nuanced argument goes, *Orlando* makes us see that biography, much like the prose styles of “Oxen of the Sun,” “has a history” and thus no real claim to timeless truth or objectivity (450). To critique this persistent claim, Woolf writes a bildungsroman whose second protagonist is biography, a genre whose development—captured in the narrator’s successive use of biographical styles from over the centuries (Saunders 449–50)—seems as far from definitive as Orlando’s own.

In her 1927 review of *Some People*, Woolf praises Harold Nicolson for “prov[ing] that one can use many of the devices of fiction in dealing with real life,” but, she adds, he falls short of “making the best of both worlds” (*Essays IV*.475). *Orlando: A Biography* takes up the challenge, for it is by writing a fictional biography that Woolf becomes “the

---

81 David Lodge speculates that fictional narratives are, in fact, extended thought experiments whose function is to get at the “first-person” phenomena (qualia) that the “third-person” framework of empirical science is unable to touch (*Consciousness* 28–31).
biographer whose art is subtle and bold enough to present that queer amalgamation of
dream and reality, that perpetual marriage of granite and rainbow” ([ibid. 476]). As the
narrator muses in Orlando, “Nature” makes each of us “so unequally of clay and
diamonds, of rainbow and granite” (77), that we cannot even know ourselves without
connecting the poetry of fiction to the prose of real life: of all the genres the novel is the
best at connecting “beauty” with “ugliness,” “amusement” with “disgust,” “pleasure”
with “pain” ([Essays IV.433], “rainbow” with “granite” ([ibid. 476]). Orlando, then, is a
model of what biography might look like, were the modern biographer to discover the
proper method for presenting “the very fabric of life” (Orlando 300).

Woolf embeds the same dualities into Orlando, in the narrator’s critical speculations
as well as in the novel’s structure. Between life and the more mechanical, structural
aspects of fiction, Woolf’s preference is generally for the former. She faults the
Edwardian novel for overemphasizing structure—the “two and thirty chapters after a
design which more and more ceases to resemble the vision in our minds” ([Essays
IV.160], the plot like “a series of gig lamps symmetrically arranged” ([ibid. 160]); these
novels may convey “the likeness of life” ([ibid. 160], but “life escapes” ([ibid. 159) from
such structures, “as formed and controlled as a building” ([Essays V.574). Far from
producing the desired synthesis of life and form, such novels “force a living being
between the walls of a rigid mould” ([Essays II.70).82 Though less famous than her
polemics in “Mr Bennett and Mrs Brown” and “Modern Fiction,” Woolf’s most pointed
statement on the life-form dichotomy—and the most pertinent to Orlando’s poem-tree

82 In Aspects of the Novel, Forster similarly criticizes James’s overreliance on “pattern” in The
Ambassadors, which he finds, “shuts the doors on life”; 112). For this reason, James’s characters are
“maimed creatures… maimed yet specialized,” “exquisite deformities” with “huge heads and tiny legs”
(110)—like Huxley’s grotesque foetuses.
structure—is her aptly named review of Clayton Hamilton’s *Materials and Methods of Fiction* (1908), “The Anatomy of Fiction” (1919). Woolf disputes the scientism of Hamilton’s approach to the art of fiction, which assumes that “every work of art can be taken to pieces, and those pieces can be named and numbered, divided and sub-divided, and given their order of precedence, like the internal organs of a frog”; Woolf protests that though “you may dissect your frog, but you cannot make it hop; there is, unfortunately, such a thing as life” (*Essays* III.44–45). The body parts and dissection are Woolf’s own metaphors, for Hamilton mentions neither—or frogs for that matter. Distinguishing the frog’s organs from its ability to hop, she vividly illustrates the distinction between the mechanics of a narrative and its “life,” its spirit.

But her stance on the life-form dichotomy is finally more nuanced, less contrastive. She favours “life” but acknowledges that an anatomical approach can be fruitful. In her review of *The Craft of Fiction*, she tempers her criticism of Lubbock’s formalism by admitting that it does improve our understanding of the art of fiction. Reclaiming the anatomical metaphor from her Hamilton piece, she notes that when “Lubbock applies his Röntgen rays,” he reveals what lies under “the flesh, the finery, even the smile and witchery” of “the voluminous lady” that is a novel: “our old familiar friend has vanished. But, after all, there is something satisfactory in bone—one can grasp it” (*Essays* III.341). The X-rays of a formal approach move criticism beyond mere content and impressionism: “until Mr Lubbock pierced through the flesh and made us look at the skeleton we were almost ready to believe that nothing was needed but genius and ink” (*ibid*. 342).

Woolf’s cautious receptivity to the formal, anatomic view of the novel is essential: it illuminates the structural and generic oddities of *Orlando* as a bildungsroman, and it also
links Woolf to other modernists concerned with theorizing the novel as a form peculiarly resistant to formal analysis. Through *Orlando* and her contemporaneous criticism, Woolf joins James, Forster and many others in updating and complicating prevailing theories of organic art derived from Romanticism. Adapting with *The Oak Tree* the romantic analogy of plant growth and poetic composition, Woolf updates organicist aesthetics for the peculiarities of the novel—its combination of prosaic and poetic, its ability to contain the modern mind’s “monstrous, hybrid, unmanageable emotions” (Woolf, *Essays* IV.429). Where Coleridge considered a good poem to manifest “unity in multëity” (qtd. in Gigante 3), Woolf and several of her peers find it necessary to divide the novel into distinct, but related, parts. Like organs, these parts serve different narrative functions; broadly equivalent to story and discourse (or *fabula* and *syuzhet*), and equally interdependent as these artificial distinctions, the identification of these narrative functions marks the modernist beginnings, and the biological context, of what we now call narratology.83

**Modernist Organicism**

As I have argued, the metafictional treatment of character development makes *Orlando* particularly valuable for the study of the modernist bildungsroman. Cogent here are the novel’s frequent pauses, during which the narrator discourses on the nature and

---

83 This is not to forget the far more sophisticated contemporary work on prose narratives by the Russian Formalists, Bakhtin, and others in Europe; but I’m concerned primarily with Woolf and other Anglophone theorists. It should be noted, however, that biological language connects the various, international formal approaches to prose narratives. Anatomical and developmental metaphors remain common in narratology; to cite but one example, Genette thus describes the beginning of Proust’s *Recherche*: “let us consider only this zigzag movement, this initial or apparently initiating or propitiatory stutter: 5-2-5-5‘-2’-5-1-5-4—which is itself, like all the rest in fact, *contained in the embryonic cell* of the first six pages” (*Discours* 35, my emphasis).
variability of time. The pauses are moments of praxis, because they temporarily stop the action and therefore affect the temporal structure of the novel, pulling apart discourse time and story time. These disruptions of the plot’s continuity alert us to a fundamental principle of the bildungsroman—the principle of organic growth underlying physical, mental, moral and social development as well as narrative progression. This principle was and is so profoundly naturalized that deviations from organic growth (that is, gradual, incremental growth from simple to complex) seem aberrant or even incoherent, as we have seen in the critical responses to *Eyeless in Gaza*. By exposing this assumption of the bildungsroman in a bildungsroman, Woolf is not denying the genre itself; in fact, she is using a metafictional dimension built-in from its origin in late eighteenth-century Germany (Kontje, *Private 6ff*), through which Goethe and other early practitioners could test and promulgate their theories of development. In *Orlando*, then, Woolf does more openly what Joyce, Forster and Huxley all do: exploit the bildungsroman’s native metafictional function to complicate or even replace existing developmental models.

If modernist (and postmodernist) bildungsromans are possible at all, the genre must therefore be understood not simply as a platform for a specific, largely nineteenth-century model of development but, rather, as a genre testing out this specific model against alternative models. A bildungsroman like *Jane Eyre*, with its insistent chronology and causality, evidently favours the traditional model over the rather more disturbing alternative embodied in Bertha Mason—an alternative Jean Rhys memorably explores in *Wide Sargasso Sea*. A modernist bildungsroman like, say, *Jacob’s Room*, by contrast, finds the traditional model insufficient and embodies alternatives in its form. So the bildungsroman is a literary thought experiment, a fictional testing ground for theories of
development—educational, social, national and, of course, ontogenetic—which change over time and differ among cultures (this is partly how I read Boes’ illuminating claim that the bildungsroman’s relation to Bildung is “performative” rather “normative” (Formative 5).

The traditional bildungsroman thus reflects a pedagogical, political and cultural ideal that Goethe, Coleridge and others carefully theorized in organic terms, while modernist takes on the genre question even as they engage these terms. The Weimar classicists and Romantics across Europe theorized development as a human version of plant growth, an organic unfolding of internal potentialities constrained by external realities (Abrams 198–213). As Denise Gigante explains, art and biology merge in such organicism, for “science and aesthetics confronted the same formal problems”; this is “the analogy between aesthetic and biological form upon which we still rely” (3). Modernists like Woolf and the other authors featured in this study were more sceptical, and though they too rely on the model of organic growth, they adapt it to their means and muddy beyond recognition the dichotomies on which Goethe, Coleridge and others founded their philosophies and aesthetics.

Romantic organicism was formulated against the mechanistic tendency in eighteenth-century theories of mind and aesthetics (Abrams 156–225); in much modernist criticism, organicism recurs as a reaction against nineteenth-century materialism (T. Gibbons 1). As Gregory Castle has shown, the modernist bildungsroman harkens back to

---

84 Like Coleridge, who defined Imagination as a phenomenon emergent from but not reducible to empirical elements that produce Fancy (Abrams 168ff), José Ortega y Gasset sees artistic content as the material which only becomes aesthetically alive through the imposition of form. Content, he argues, is equivalent to “chemical processes”, essential for “life” but not enough to account for it (69). “Just as life cannot be reduced to chemistry but begins to be life only when it has imposed upon the chemical laws other original processes of a new and more complex order, so the work of art is what it is thanks to the form it imposes upon the material or subject” (69–70).
the “aesthetic-spiritual Bildung” of Goethe and Humboldt in reaction to “the ascendency of new pragmatic modes of socialization” in Victorian coming-of-age novels (31).

Modernist experiments with the bildungsroman do indeed suggest a romantic re-invention of a plot broadly perceived to have become conventional, even mechanical in its structure. In his essay “A Portrait of the Artist,” Joyce seeks to avoid the “iron, memorial aspect” of so many biographical narratives, favouring a more organic, “fluid succession” (*Portrait* 257, my emphasis). But if modernist organicism resembles its romantic precursor, it differs at least in this: the science of organic change had in the interim seen Darwin, Spencer, Weismann, Mendel and many others; and a century would have defused somewhat the fear of mechanism, making it less threatening, and less contrary, to organic life.

As a modernist bildungsroman, *Orlando* exemplifies how writers understood not only the genre itself but the novel more generally. If “the novel is the laboratory of narrative discourse [le laboratoire du récit],” as Michel Butor puts it (9), the bildungsroman is the laboratory of the novel, a most literal instantiation of the organic oneness of character and action, form and theme, mind and body. It offers an unusually literal take on James’s dictum that character is action and action character (*Literary* 55), its narrative determined by and reflective of the protagonist’s bodily and mental development. From this premise it is a short step to equating its plot with its protagonist or, in bildungsromans stressing the embodied nature of identity and mental development, equating plot and body.

This textual embodiment explains why Bakhtin considers the bildungsroman exemplary of the modern novel (*Speech* 19), in which “changes in the hero himself acquire *plot* significance…. Time is introduced into man, enters into his very image,
changing in a fundamental way the significance of all aspects of his destiny and life” (ibid. 21). In the bildungsroman, “the novel of human emergence” (ibid., emphasis original), character is not only inextricable from incident, as James argued of fiction in general; its inextricability from time and action is advertised and incorporated into the narration, making it easy to “read time in space” (ibid. 53)—the space here being the protagonist’s body—or, what amounts to the same thing, to read space temporally in the protagonist’s bodily development. Thus the genre takes pride of place among the forms of the modern novel, for its central chronotope, “the place where the knots of narrative are tied and untied” (Bakhtin, Dialogic 250), is embodied in the protagonist. It is through the protagonist’s developing body, mind and social interactions that “time becomes … palpable and visible; the chronotope makes narrative events concrete, makes them take on flesh, causes blood to flow in their veins” (ibid. 250). Bakhtin’s bodily imagery turns out to be more than metaphor. The very notion of the chronotope, as Michael Holquist has shown, is biological and psychological, even though Bakhtin defines it with reference to Einstein (ibid. 84). Bakhtin finds many metaphors to illustrate the chronotope, but most often he uses biological terms, time being written in the flesh.

For this reason, the chronotope peculiar to the developmental narratives is unusually visible, revealing through the protagonist’s body how “time, as it were, thickens, takes on flesh, becomes artistically visible; likewise, space becomes charged and responsive to the movements of time, plot and history” (ibid. 84). This explanation reveals why Bakhtin was, as Holquist argues, drawn more to biology than to physics: biology “concerns itself with animate subjects” and therefore better approximates the dynamism he cherishes in novelistic discourse (Holquist 170). The bildungsroman therefore equates narrative
structure with organismal growth. The same equation is frequently if less rigorously proposed in contemporary Anglophone criticism, though its most explicit and influential incarnation is Propp’s morphological approach to narrative. Despite the stasis implied by morphology, Propp sees narrative structure in dynamic, developmental terms: it is like “organic formation in nature” (94), “formation” stressing the temporal process of giving or taking shape. Narratives, like so few other human artifacts, are—or at least seem to be—developmental entities: we speak of plots thickening, of characters growing or evolving, of narrative threads coming together.

These developmental metaphors are often dead ones, but formal theories of prose tend to reanimate them. The tendency is especially marked in self-referential, metafictional novels, which can indulge the resemblance between plot development and ontogeny without worrying, as criticism usually must, about logic or consistency. *At Swim-Two-Birds*, with its playful theories of “aestheto-autogamy” (40), gleefully acknowledges its own “corporal discursiveness” (216). Autobiography merges with ontogeny in Francis Chelifer’s journal in Huxley’s *Those Barren Leaves*: “Style pours out of my fountain pen. In every drachm of blue-black ink a thousand *mots justes* are implicit, like the future characteristics of a man in a piece of chromosome” (76). Nowhere is the relation clearer than in Salman Rushdie’s *Midnight’s Children*—not a modernist bildungsroman, of course—when Saleem Sinai reverses Chelifer’s vehicle and tenor, representing his embryonic development as the gestation of the book itself: “What had been (at the beginning) no bigger than a full stop had expanded into a comma, a word, a sentence, a paragraph, a chapter; now it was bursting into more complex developments, becoming, one might say, a book” (100). Less explicitly, *Orlando* announces the same process,
embodying time not only into Orlando and the oak tree, but also, more complexly, into
*The Oak Tree*.

As examples of biological organicism in the bildungsroman, these cases are especially
overt articulations of a common tendency in early twentieth-century criticism, which
often represents the novel as a form particularly hospitable to life. From Pound and Joyce
to now lesser-known figures like Bliss Perry (*A Study of Prose Fiction*, 1902) and Gerald
Gould (*The English Novel of To-day*, 1924), critics variously insisted that the novel does
not merely reflect life; it must be living itself. Joyce, for example, stresses the living
quality of art when he corrects, despite not knowing Greek, a translation of Aristotle’s “e
*tekhne mimeitai ten physin*” from “Art is an imitation of Nature” to “Art imitates Nature.”
This revision, Joyce argues, highlights the fact that “the artistic process is like a natural
process” (*Critical* 145). This is, of course, a view he takes to great lengths all three of his
novels; it is nicely captured by Stephen’s talk of “artistic conception, artistic gestation
and artistic development” (*Portrait* 209).

Joyce’s art-nature analogy is typical of the organicist turn in modernist criticism, which, David Amigoni argues, makes its appearance in James’s “Art of Fiction” (1884).
A watershed event in Anglophone novel theory, the essay modernizes the mechanistic
view of fiction offered by Walter Besant’s own “Art of Fiction” (Amigoni 107–08, 111). James denounces Besant’s view of a novel as “a work of mechanics” (*Literary* 48)

---

85 Stephen’s aesthetic is also, as Umberto Eco’s *Art and Beauty in the Middle Ages* makes clear, a revision of Aquinas’s (obviously) pre-romantic “aesthetics of the organism” (74–83). Everything old is new again.
86 Like all attempts to pin down such tendencies, Amigoni’s distinction loses some crispness when we examine Besant’s essay. Indeed, Besant complements his mechanical imagery with gestational metaphors: a reader can “discover … how the author built up the novel, and from what original germ or conception it sprang” (35)—unless it is a bad novel and so “stillborn” (40); characters “from the first moment of conception … grow continuously” (25), for they are as “capable of development” as “real” people (26). Conversely, modernists don’t all scorn the machine, even if we discount Futurism. Ford Madox Ford, for example, calls “the modern novel … the immensely powerful engine of our civilization” (60).
and famously insists the novel is really “a living thing, all one and continuous, like any other organism” (ibid 54), an “organic whole” (ibid 60) designed to capture “the strange irregular rhythm of life” (ibid 58). In “Criticism” (1891), James classifies the novel among the “sensitive organisms” of true art (Literary 97); journalism and other ephemera are, by contrast, simulacra of life, their production like “the manufacture of dummies” and their products like “stuffed mannikin[s]” in a train, that symbol of the industrial age (ibid. 95).

Forster, too, contrasts the living with the mechanical, especially in his discussion of character. He praises Dickens for writing characters whose “effects … are not mechanical” even though they are flat (49): they are “alive” (50). A plot that can “grow” and “open out” (67) is better than a perfectly logical and constructed one; a good plot “should be organic and free from dead matter” (61), while too much “causality” (65) or “logic takes over the command from flesh and blood” (66). The same tensions play different parts in Wilson Follett’s The Modern Novel (1918), which situates the origin of modern organic fiction not in contemporary novels but in Victorian fiction. George Eliot, Follett argues, replaced “the worn machinery of coincidence and mystery” with a naturalistic view of “the universe naturally conceived as an organism” (242), a shift in outlook that requires a shift in technique—“a modern change from the casual to the causal” (241)—and, by consequent, a change in narrative design.

To survey the extent of such language in early twentieth-century criticism is beyond the scope of this chapter, and an extreme case will have to suffice to convey the urgency and passion of modernist organicism. In Scheherazade, or The Future of the Novel
(1928), John Carruthers\textsuperscript{87} ascribes the absence of masterpieces in modern fiction to a “neglect” of “inherent form” (66). His notion of form is illuminating: “Form, shape, pattern, organic purpose—is not this precisely what the novel of to-day so manifestly lacks?” (65, my emphasis). The corollary of this lack, argues Carruthers, is an unfortunate commitment to “analysis, analysis, analysis,” which promotes

the twin delusions, that a mind consists of its assembled parts, like a motor-car engine which can be taken to pieces and put together again;\textsuperscript{88} and that a single mind can be revealed in isolation from its fellows and unrelated to its inorganic surroundings. Stress the concept of organism instead of the concept of Cartesian matter, as the ultimate category of the world, and both these delusions are at once shown up. And that is exactly what is now being done. (66–67, my emphases)

Carruthers believes that modern science can guide the modern novel away from its belated, nineteenth-century “mechanical materialism,” which “the leading thinkers of to-day, in metaphysics, psychology, biology, physiology, and mathematical physics, have just quietly killed” (63–64). Carruthers mirrors Woolf’s distinction between Edwardian “materialists” and Georgian “spiritual” fiction (Woolf, \textit{Essays IV}.161); then again, his enthusiasm for Whitehead’s “new doctrine of organism” (Whitehead 36) is anathema to Woolf, who thinks each novel should generate its own form and theory (\textit{Essays IV}.162).

But there is, undoubtedly, a common idea and a common vocabulary between them: the

\textsuperscript{87} Pseudonym of John Young Thompson Greig. This fascinating little book is unusual for its optimistic outlook on the contemporary novel; Carruthers agrees with Woolf, whose criticism he knows and at times appears to paraphrase, that though there are no contemporary masterpieces (12–17), the future of the novel looks bright. He is also unusually tolerant, for a critic in the 1920s, “of jazz and modernism, sex and anthropology, the poems of Mr. Eliot and the savagery of Mr. Wyndham Lewis” (17).

\textsuperscript{88} A metaphor recalling Woolf’s in “Modern Fiction”: “the analogy between literature and the process … of making motor cars scarcely holds good beyond the first glance. It is doubtful whether in the course of the centuries, though we have learnt much about making machines, we have learnt anything about making literature” (\textit{Essays IV}.157).
novelist of the future, Carruthers predicts, “will believe … that in shaping his creation into an organic pattern he is working in the very spirit of life itself” (74); to Woolf, likewise, “whether we call it life or spirit, truth or reality, this, the essential thing, has moved off, or on, and refuses to be contained any longer in such ill-fitting vestments” as the older, materialist forms provided (Essays IV.160).

Carruthers epitomizes a contemporary tendency to see form as an organic, emergent property of narrative—a tendency whose relation to biology is evident. In a 1933 essay, C. H. Rickwood echoes Carruthers’ preference of “the organic” over the “mechanical” (298) and likewise justifies it with the rise of Gestalt thinking in biology: “character is, to borrow biological jargon, an emergent quality of the novel. It emerges from the story, which is itself structurally a product of language” (300). As it had for Goethe, organicism is in itself a theory of development applicable to both biology and literature. For Follett, then, “naturalism makes the same difference in the novel as in our conception of the world: it replaces arbitrary creation by the organic evolution of a thing which grows into certain forms by its own inward nature, as it were by a kind of self-compulsion” (242). It seems inevitable that a widespread concern with notions of emergence and organicism would particularly impact contemporary approaches to the bildungsroman—the novel of “emergence” (Bakhtin, Speech 21).

But for many of the theorists who were also practicing modernist novelists, a doctrinal commitment to organicism seems to have been as unpalatable as crude materialism. In The Structure of the Novel (1928), Edwin Muir mocks Carruthers for “proving that the novel must have form because Professor Whitehead says that life has it” (9). In overvaluing life, theorists of the novel lose sight of their object of study: “what they
forget is the novel” (10). Specifically, they forget what distinguishes novels from real life—form. “It is axiomatic,” writes Muir, “that the pattern of no novel, however formless, can ever be so formless as life as we see it; for even Ulysses is less confusing than Dublin” (11). And yet formlessness was a widely recognized peculiarity of the novel, one which challenged and inspired critics and authors alike.

Even as it borrows the organic-mechanical and life-form dichotomies from romanticism, modernist criticism tends to refine them out of existence as oppositions. Partly this is achieved by an apparently willful inconsistency in the use of organic and mechanical or architectural metaphors, as we shall observe in Henry James’s prefaces. Partly it emerges from equivocation and bowing to the complex facts of fiction, as we find in Forster, Muir and Woolf in particular. In their criticism, the distinctions Coleridge so carefully maintained are overlaid upon many other distinctions, often in ways that weaken rather than enforce the original dichotomy. In Woolf’s essays, for instance, the organic-inorganic overlaps with the soft-hard dichotomy, as with the rose-leaf and rock; but other pairings are less consistent: the rainbow and granite are respectively soft and hard, but both inorganic, while a novel’s “finery” is soft but inorganic, its “skeleton” hard but organic (Essays III.341). Rather than suggesting carelessness on Woolf’s part, such mismatches are consistent with her and other modernist attempts to break down such boundaries. When dichotomies are constructed, then, it is almost always with an evident heuristic aim or metaphorical flourish, not a desire to lay down doctrine. When these distinctions map onto that between story and discourse (as in Forster and Storm Jameson in particular), the mapping is pragmatic or fanciful, anticipating the

---

89 Hugh Kenner stresses the flip side to modernist organicism in The Mechanic Muse, arguing that modernist techniques owe much to the machines by which modernist texts were produced and by which modernist artists were surrounded: the linotype, cinema, electric trams, the internal combustion engine.
poststructuralist narratology’s contention that discourse and story are as inseparable as my skin is from my bones (see Rimmon-Kenan 6–8).

What Woolf and her peers offer in lieu of romantic organicism, in firm opposition to mechanism, is a modified and ampler organic vision. The simplest way to describe it is as a fusion of organism with mechanism, but this is misleading because it preserves the opposition. More accurately, it is a functional division of organicism into two components, one hard and architectural and the other soft or ethereal and living. We’ve already encountered these two components in the frog’s “organs” and its “hop” (Woolf, Essays III.44–45), or in the “skeleton” and the “flesh, the finery” of the novel (ibid. III.341); we will shortly revisit them in Orlando’s oak tree and in the poem it inspires. These pairings are not oppositions; interdependent, their two components indicate an important, historically specific connection between biology, the modernist bildungsroman and the rise of formal theories of the novel.

These theories tend to correlate form and life, even when they appear to distinguish them. In “Modern Fiction,” admittedly, Woolf starkly differentiates between matter and spirit in her complaints against Arnold Bennett, whose fiction is like a house, “so well constructed and solid in its craftsmanship that it is difficult for the most exacting of critics to see through what chink or crevice decay can creep in. There is not so much as a draught between the frames of the windows, or a crack in the boards. And yet—if life should refuse to live there?” (Essays IV.158). The dualism between life and house is neat, but its neatness reflects Woolf’s particular polemic purpose in “Modern Fiction”

---

90 For a succinct and illuminating analysis of the organic-mechanical dichotomy’s historical origins and semantic polyvalence, see Williams’ Culture and Society, esp. “A Short Note on ‘Organic’” (263–64).
91 In “How Should One Read a Book?” Woolf likewise insists: “the thirty-two chapters of a novel … are an attempt to make something as formed and controlled as a building: but words are more impalpable than
more than it does a general theory. In her review of *Aspects of the Novel*, in fact, she comes close to reversing her priorities, arguing that Forster “disowns…. part of his duty, if it is his duty,” which would be to be more formalist about the novel: “if fiction is … in difficulties, it may be because nobody grasps her firmly and defines her severely. She has had no rules drawn up for her. And though rules may be wrong, and must be broken, they have this advantage—they confer dignity and order upon their subject” (*ibid.* IV.460). One detects a note of sarcasm in Woolf’s appeal to “dignity,” but her statement is perfectly in line with the general tenor of her review. She makes a similar point in her review of Dorothy Richardson’s *The Tunnel* (*Essays* III.10–12).

As a record of Woolf’s complex and, indeed, deconstructionist attitude towards the life-form dichotomy (as well as the dichotomies with which it is associated), the introduction to *Mrs Dalloway* is particularly important. Here she adapts the architectural analogy to fit, rather than to contrast with, her notion of life, and this deconstruction is, appropriately enough, performed by means of biological metaphors. Responding to reviews of the novel, Woolf notes that *Mrs Dalloway* was neither quite “the deliberate offspring of a method” nor an idiosyncratic “form … of her own” developed in reaction against “the form of fiction then in vogue.” Instead, she writes,

> The novel [i.e., as a genre] was the obvious lodging, but the novel it seemed was built on the wrong plan. Thus rebuked the idea started as the oyster starts or the snail to secrete a house for itself. And this it did without any conscious direction…. The other way, to make a house and then inhabit it, to develop a theory and then... 

bricks” (*Essays* V.574). Forster, by contrast, inverts the values of the dichotomy while maintaining the distinction between life and architecture; of *Ulysses*, Forster contrasts Joyce’s sordid content with the mythological grandeur the novel borrows from Homer for its structure, calling the result “a bat hanging to a cornice” (84).
apply it, as Wordsworth did and Coleridge, is, it need not be said, equally good and much more philosophic. But in the present case it was necessary to write the book first and to invent a theory afterwards. (Essays IV.549–50)

So form, the house, emerges from what is alive in a novel. Woolf is not merely repeated the oft-cited fact that form and content are interdependent, or anticipating the (now) critical truism that any textual practice is inherently theory-laden; she is also arguing that even the most inert aspect of a novel, its form, is an outgrowth of an organic process like the secretion of a snail’s shell92 or the growth of a plant (“books are the flowers or fruit stuck here and there on a tree which has its roots deep down in the earth of our earliest life, of our first experiences” [ibid. 549]). Examining the dichotomy of “form” and “idea,” Woolf blurs it. “Nothing is more fascinating than to be shown the truth which lies behind those immense façades of fiction,” she writes, but having isolated “truth” from the architectural “façades,” she concludes that “probably the connection between the two is highly complicated” (ibid. 549).

In opposing “life” with architectural perfection, then deconstructing the opposition, Woolf evokes the “house of fiction” in James’s preface to The Portrait of a Lady (Art 46). Stating that “literary form” is “the pierced aperture” (46) through which a novelist peers, James seems to favour the architectural design that Woolf associates with Bennett. As one expects of James, however, a closer look reveals subtler negotiations. If the windows are “mere holes in a dead wall,” James reminds us “they have this mark of their own that at each of them stands a figure with a pair of eyes, or at least with a field-glass”

92 See also Wilbur Cross’s The Modern English Novel (1928), which deplors contemporary preferences for “technique” over “substance” (2). Siding with H. G. Wells, Cross accuses James of “th[inking] less about his men and women than about the pattern in which they were to fit. The snail must fit the shell” (21).
(46). Behind the “dead” wall are living eyes; but the reversal is itself undermined by the near-equivalence of eyes and “field-glass.”

James’s equivocation anticipates how he treats *The Portrait of a Lady*’s genesis. His metaphors are sometimes insistently organic. The novel grew by “needful accretion” (52), in step with the growth of Isabel Archer; its “‘plot’” (42) emerges organically from Isabel’s “essence” and that of other characters (52). Yet the idea that characters have lives of their own, which give plots organic shape and novels life, is countered by James’s equally insistent metaphors of construction and artifice. The characters who seem so alive are but products of “the artful patience with which … I piled brick upon brick” (55). Composing *The Portrait*, writes James,

> took nothing less than that technical rigour … to inspire me with the right confidence for erecting on such a plot of ground the neat and careful and proportioned pile of bricks that arches over it and that was thus to form, constructionally speaking, a literary monument. Such is the aspect that to-day *The Portrait* wears for me: a structure reared with an ‘architectural’ competence…. On one thing I was determined; that, though I should clearly have to pile brick upon brick for the creation of an interest, I would leave no pretext for saying that anything is out of line, scale or perspective. (52)

It seems the “delicate organism” has moved out, leaving only the “dead walls” of “the house of fiction” (46). Then again, James sneaks in a crucial caveat with the phrase “constructionally speaking,” for indeed he “would rather … have too little architecture than too much” (43).
James’s preface invalidates any simple hierarchy of life and brickwork, subtly renegotiating and perforating the categories of living and dead, natural and artificial, organic and constructed. The “literary monument” is, after all, erected on “a plot of ground” (ibid. 52)—a natural foundation that is cast, elsewhere in the preface, as “soil out of which [the artist’s] subject springs. The quality and capacity of that soil, its ability to ‘grow’ with due freshness and straightness any vision of life” (45) couples the “architectural” aspect of the novel with its organic antithesis. The contending aspects are called “the essence” and “the form” (53), but it is of course obvious to James that his division is merely a convenient one. It is in the interaction of the constructed and the organically unfolded that the novel truly lives.

In his preface to “In the Cage,” James similarly conjures up organic growth from the seemingly unfertile soil of “literary form” (Art 157). Defending his use of “the ‘scenic’ law,” which readers evidently found stifling, James argues that the treatment by “scene” regularly, quite rhythmically recurs; the intervals between, the massing of the elements to a different effect and by a quite other law, remain, in this fashion, all preparative, just as the scenic occasions in themselves become, at a given moment, illustrative…. The point, however, is that the scenic passages are wholly and logically scenic, having for their rule of beauty the principle of the “conduct,” the organic development, of a scene the entire succession of values that flower and bear fruit on ground solidly laid for them. (Art 157–58, my emphases)

“Organic development” in this passage seems entirely continuous with, and unopposed to, the scientific and formalist implications of James’s references to law, logic, rule,
principle and the “massing elements” that suggest the whole as a sum of its smaller parts. “The scenic system … rhythmically recurs”—like a machine (yet it “bear[s] fruit”).

Such negotiations between art and life are further refined in the preface to The Tragic Muse (1909). Idealizing the novel as an organism, James finds a relatively concrete set of metaphors with which to articulate his views on that vague quality that he calls “composition” (Art 84). Sprawling nineteenth-century novels are sometimes bursting with life, he admits, “but what do such large loose baggy monsters, with their queer elements of the accidental and the arbitrary, artistically mean?... There is life and life, and as waste is only life sacrificed and thereby prevented from ‘counting’, I delight in a deep-breathing economy and an organic form” (84). The vitality of novels like War and Peace is undeniable, but they lack the “composition” and “form” required to give life an aesthetic meaning. By calling them “monsters,” playing on the term’s biological meanings—“a malformed animal or plant” or “a fetus, neonate, or individual with a gross congenital malformation” (OED)—James accepts that “loose baggy monsters” are living, but they are not coherent, “whole organisms.”

They have life, but not what Schiller called “living form” (101). In a 1922 letter, Woolf similarly contrasts Jacob’s Room to the “fabulous fleshy monsters” of “Walpole, Wells, etc., etc.” (qtd. in Alt 181). Both authors idealize a sleeker, better-adapted, well-formed novel.

James’s play with form and essence, house and organism, and other such dichotomies recall Orlando’s uneasy synthesis of “time on the clock and time in the mind” (98), or Woolf’s image of “a rose leaf” not quite enveloping “a rock” (Essays IV.430). Similarly, but more drastically, Edwin Muir merges organicism and mechanism in his reading of

---

93 Cf. “Science is taking on a new aspect which is neither purely physical nor purely biological. It is becoming the study of organisms” (Whitehead 103).
Vanity Fair, a “novel of character” (7ff) whose ready-made yet memorable characters are “lively but necessary machinery” (30). With its deterministic plot, the “novel of action” (7ff), like Treasure Island, is equally able to be “good” without being “like life” (25).

Only the “dramatic novel” (Muir 41ff) gives us “a development reproducing the organic movement of life” (85). Exemplified by Pride and Prejudice, this class of novel seamlessly hybridizes novels of action and of character: “there is no external framework, no merely mechanical plot; all is character, and all is at the same time action” (43). This organicism, however, emerges from the galvanizing tension between the mechanism of the novel of action and that of the novel of character: the plot’s “strict internal causation” fuses with the “constancy” of characters (45), thus generating “life” from mechanism.

“Everything does derive from factors stated and unalterable in the beginning; but at the same time the terms of the problem will alter, bringing about unforeseen results” (48).

Muir explains,

Both these elements, the logical and the spontaneous, necessity and freedom, are of equal importance in the dramatic plot. The lines of action must be laid down, but life must perpetually flood them, bend them, and produce the “erosions of contour” which Nietzsche praised. If the situation is worked out logically without any allowance for the free invention of life, the result will be mechanical, even if the characters are true. (47–48)

In the dramatic novel, observes Muir at his most Jamesian, “character is action, and action character” (47). The plot emerges from “this tension in dramatic characters; the

94 Muir illustrates the difference between the character novel and the dramatic novel with a delightfully biological metaphor: “It is as if the talent of the character novelist could only propagate itself by fission, where the dramatic genius observes the narrower limitations of reproduction; the variety of the first remaining purely spatial, where that of the other, being organic, can only be manifested in time” (86).
tension between their completeness seen as fate, and their progression seen as development” (57). At first glance, Muir seems to be embracing the doctrinal organicism for which he mocked Carruthers, though unlike Carruthers Muir also values novels that are neither dramatic nor developmental. More fundamentally, Carruthers suggests that a novel’s organicism emerges by a transfiguration, what Stephen Dedalus calls “forging … out of the sluggish matter of the earth a new soaring impalpable imperishable being” *(Portrait* 169); for Muir, however, the “movement of life” (49) is closer to a reaction between two mechanistic elements artfully combined. The organic models offered by Carruthers and Muir differ more in emphasis than in substance, but Muir’s illustrates a distinctly modernist aesthetic, which retains organicist ideas from romantic philosophy but synthesizes them with their mechanistic antithesis.

The paradoxical fusion of mechanism and organism culminates in the criticism of Wyndham Lewis, who deplores organicism and pointedly celebrates machines and the inorganic. Yet Lewis, too, holds onto the organic view of art. As Fredric Jameson observes, he combines his “non-human outlook” and mechanistic language with an ideal of organic form *(Fables* 26), moving towards a fusion of body and machine. In fact, what might appear to be admiration for machines is often quite the opposite; his claim that “‘men’ are undoubtedly, to a greater or less extent, machines” *(Men* 116) doesn’t really compliment machines, his view of “men” being rather jaundiced. Instead Lewis favours the same art-as-organism as the Romantics, though his ideal organism is markedly unlike theirs. In his notorious attack on Joyce, Lewis notes that “in contrast to the jelly-fish” that is *Ulysses*, the “full-blooded” stutter of Gertrude Stein and “the intestinal billowing” of D. H. Lawrence, he admires the hard—yet still organic—parts of organisms: “the
shield of the tortoise, or the rigid stylistic articulations of the grasshopper…. The ossature is my favourite part of a living animal organism, not its intestines” (Men 120–21). Notably absent here are the gears and engines of machines and motorcars.

Lewis retains the organic ideal by stressing those parts of the organism that seem most machine-like. He exults the hardness of shells and bones because the “softness, flabbiness and vagueness” he sees in Joyce (Time 120) are only simulacra “of ‘life,’ of ‘organism,’” which conceal the fact that Ulysses is “essentially dead” (ibid 110, original emphasis); at best, it is “a sort of vegetable or vermiciform average. It is very mechanical; and according to our human, aristocratic standards of highly-organized life, it is very dead” (110). Joyce’s weakness is not that his novel aims to be organismal but rather that “the secret of an entire organism escapes him” (118, original emphasis). Joyce therefore typifies a widespread, desperate attempt “to make … dead matter real” by “bring[ing] it to life” (170); but for Lewis this is merely to say “something alive, in place of ‘mechanism’; ‘organism’ in place of ‘matter’” (174, original emphasis). It is the fallacious equation of matter with organism that Lewis abhors in Bergson and Whitehead.

In Lewis’s “paradoxical aesthetic” (Klein 5), then, art is machine-like; but it is not a machine. He hates “the physiological, organic, view of nature” (Time 167), but also “the doctrine of a mechanistic universe” (119). Favouring hard biological substances (shells, bones) allows him to deploy metaphors of life and organisms without succumbing to romantic “flabbiness” (120). This aspect of his aesthetic belies his self-proclaimed status as the enemy of Bergson, Stein, Woolf and Lawrence; indeed, his rhetorical appeals to “life” and “organism” highlight affinities between him and many of his contemporaries.
Surprisingly, then, Lewis’s distinction between bone and flesh, and the like, brings us back to Forster, who likewise divides the artwork not into the mechanistic and the organic, but rather into an organism composed of multiple and various organs, some hard, others soft, all necessary and therefore not as distinct as theoretical systems make them seem. Some aspects, like pattern, seem lifelessly geometric; others, like round characters, have “the incalculability of life” (Aspects 54). Forster finds it useful to define story as a “backbone”\textsuperscript{95} and plot and other “nobler aspects” (19) as “the finer growths that [story] supports” (17), as if these aspects could be treated apart (elsewhere, in fact, he admits the impossibility of actually separating them). Woolf exploits similar dichotomies when she writes about form, and in Orlando’s treatment of oak tree and poem, but she ultimately rejects the facile distinctions that allow Forster, as she read him, to paint fiction “as a parasite which draws her sustenance from life, and must, in gratitude, resemble life or perish” (Essays IV.462). The ways in which she complicates firm distinctions, however, is, though she does it with particular force and clarity, characteristic of modernist theories of the novel.

Affinities between Woolf, Lewis and Forster seem unlikely until we see how much they destabilize distinctions between organic and inorganic, form and content, and body, mind and spirit. To unpack the complex interplay of backbone and finer growths, shell and viscera, ground and brick, rose and rock, we can look to Roger Fry, a painter and aesthetician close to Forster, Lewis and Woolf. In Vision and Design (1920), Fry argues

\textsuperscript{95}Forster’s metaphor evokes an intriguing if probably accidental connection: the fact that Goethe, who did so much for the history of anatomy, developmental biology, genre theory and the bildungsroman, first hypothesized that the skull, which houses the brain, is composed of modified vertebrae. Likewise the plot and other “finer growths” are, in Forster’s theory of the novel, derived from story, “the backbone” of the novel (19). Incidentally, it was Thomas Henry Huxley who, after 70 years, finally falsified Goethe’s theory in 1858 (Thorogood 141).
that humans, unlike animals, can recreate their sensorial experiences through memory, and therefore live

a double life; one the actual life, the other the imaginative life. Between these two lives there is this great distinction, that in the actual life the processes of natural selection have brought it about that the instinctive reaction… shall be the important part of the whole process…. But in the imaginative life no such action is necessary, and, therefore, the whole consciousness may be focussed upon the perceptive and the emotional aspects of the experience. In this way we get, in the imaginative life, a different set of values, and a different kind of perception. (13)

Fry’s “instinctive” and “imaginative” are reproduced in Forster’s claim that “daily life… is practically composed of two lives—the life in time and the life by values” (Aspects 19), and in Woolf’s claim that one sort of time “makes animals and vegetables bloom and fade with amazing punctuality” (Orlando 98) while another bends itself to the “extreme length and variety” of the human mind (ibid. 99). As an abstraction, Forster’s division of daily life is mundane, but applied to his theory of the novel it parallels the crucial narratological distinction between story and plot into “the lowest and simplest of literary organisms” (19) and “an organism of a higher type” (20). Likewise, by distinguishing between the flesh or viscera and the skeleton, Lewis gives body to his aesthetic philosophy, which is founded on the tensions between representation and abstraction, inside and outside, and, as Scott Klein has argued, between “the ‘nature’ of thematic materials and the ‘design’ of narrative form” (23). The nature-art binary in Lewis (and Joyce) is, Klein argues, homologous with fabula-syuzhet—a distinction, always troubled and never entirely clear, from which so much of narratology would follow.
Without claiming philosophic agreement between thinkers who hold very disparate views and even hold various views themselves, and without suggesting consistent correspondences between what two critics call *organic* and *mechanistic*, I see remarkable similarities in how Lewis, Muir, Woolf, Forster and others incorporate mechanism into a sort of two-tiered organism made up for hard, almost dead parts and soft, more living parts. By doing so, they exemplify the way that modernist critics of the novel addressed the perennially difficult problem of theorizing form, narrative structure and character. Rhetorically and philosophically blurring categories that intuitively seem so stark must have helped theorists who were struggling to develop formal approaches to the novel.

One of many variations on this theme occurs in Storm Jameson’s *The Georgian Novel and Mr. Robinson* (1929). Appropriating Forster’s terms “story,” “pattern” and “rhythm,” Jameson claims that “the story” is “the backbone of the book. But those animals which are all spine are not the most pleasant of their kind. And a novel which is nothing but a story, a series of events following each other like the knobs on the spine, is a very crocodile of a book, and *a dead crocodile* at that” (11). What animates the crocodile is “the inner Pattern[,] … the soul of a novel, which, if it lacks it, has not a soul, but is as the beasts that perish. The rhythm,” meanwhile, “is dictated by some necessity of the novelist’s mind. Or of his spirit. It is the faith by which the dry bones of plot and character live” (51). Storm’s metaphors do not resolve into a logical and consistent theory of the novel, but like Lewis’s and Forster’s they concretize notoriously abstract narratological distinctions. Her anatomizing approach exemplifies the formalist strand in modernist criticism, which so often exploits biological language in ways that destabilize the distinction between organism and mechanism, content and form, life and art. In
“Notes on the Novel” (1924), Ortega writes that “great novels are atolls built by myriads of tiny animals whose seeming frailness checks the impact of the seas” (90). Lewis might have liked this lovely image—Forster too. By likening novels to corals, Ortega thoroughly blurs the boundary between the fleshy, living polyp and the calcareous, dead structure of the reef. In the novel so constituted, “essential grace springs from its structure, its organism” (69).

These distinctions eventually come down to the difference—the possibility of dissociating—story and discourse. In other words, they resolve to narrative’s temporal structure, which, as we have seen, is the single most important locus for biologically-related experimentation in the modernist bildungsroman. The distinction between story and discourse is, not incidentally, a product of modernist theorists. Though Forster’s narratology is embryonic relative to contemporary Russian Formalism, he is remarkable among Anglophone critics for articulating several important narrative dynamics and distinctions, all of them pertinent to my investigations into biology and the structure of modernist bildungsromans: the differentiation of story and plot, pattern and rhythm, and sequence, causality and “cross-correspondences” (Aspects 61). And because he cultivates a chatty, anti-scholarly style, Forster indulges in highly metaphorical language that is as engaging as it is revealing of contemporary literary exploitations of biology.

In his seminal distinction between story and plot, Forster notes that story, a mere sequence of events, “is the fundamental aspect without which [the novel] could not exist. That is the highest factor common to all novels, and I wish it was not so, that it could be something different—melody, or perception of the truth, not this low atavistic form” (17,

---

96 As would Darwin and Proust, who both use corals to defamiliarize received ideas about individuality (Darwin, Voyage 99–100; Proust, À l’ombre 478).
my emphasis). Story, to Forster, is an unfortunate but necessary relic—just as our body, for all our exalted thoughts, harkens an animal past. “The story is primitive,” he writes, “it reaches back to the origins of literature, before reading was discovered, and it appeals to what is primitive in us” (27). Story is, more concretely, a mere body part, or a lowly, ugly animal:

   It runs like a backbone—or may I say a tape-worm, for its beginning and end are arbitrary. It is immensely old—goes back to neolithic times, perhaps to paleolithic. Neanderthal man listened to stories, if one may judge by the shape of his skull…. It is the lowest and simplest of literary organisms. Yet it is the highest factor common to all the very complicated organisms known as novels. (Aspects 17–18)

The anatomical conceit helps Forster single out and analyse particular aspects of novels without generating the abstractions that can make, say, Russian Formalism so hard going. Making story a backbone or tapeworm (that is, a part or parasite of a larger body), Forster can “hold it out on the forceps—wriggling and interminable, the naked worm of time” (19)—and analyze it; thus he can “isolate the story … from the nobler aspects through which it moves” (ibid.). Gone is the need for slippery metaphorical distinctions between the story’s body and its soul. Instead, there are aspects of the novelistic body some more primitive than others—but all bodily and organic.97

97 In a fascinating adaptation of Forster’s metaphor, Storm Jameson characterizes the Georgian novel (here *Mrs Dalloway*) as a novel in which the backbone of story has been reduced to a fragment: “it is like a single knob of that necessary spine. From which, if we are expert enough, we are to reconstruct the whole animal” (22). Later she adds that her personification of the average reader, “Mr. Robinson…. feels that if this cavalier treatment of the Story … were encouraged, the Story might eventually disappear entirely, and he be left without even a bone of that prehistoric monster” (23). Similarly, in *The Moon and Sixpence*, Maugham’s narrator-biographer deplores gaps in the record of his subject’s life: “the facts…. I have now are fragmentary. I am in the position of a biologist who from a single bone must reconstruct not only the appearance of an extinct animal, but its habits” (171)—an evident nod to Cuvier, or perhaps to Sherlock Holmes’ allusion to Cuvier in “The Five Orange Pips” (*Doyle* 95).
The more the plot “suspends the time-sequence” (story), the more it is “capable of high development” (60). But nowhere does Forster allow the plot to become spirit and fly. It is never more than one of “the finer growths” that story “supports” (17). Even “pattern,” the aspect that “appeals to our aesthetic sense” (103), is bodily in the sense that it requires “nourishment from the plot” (104). It is—like James’s “house” and Woolf’s frog organs—“neat carpentry” (104). Only “rhythm” frustrates the conceit, demanding a different kind of analogy altogether (i.e., music) (116). In a spectacular extension of his anatomical model, Forster deplores the “Circe” episode of Ulysses, with its chaotic overlap of textual echoes, as “a superfetation of fantasies, a monstrous coupling of reminiscences” (85). Superfetation is a (very rare) condition in which a foetus is conceived by an already-pregnant female, resulting in simultaneous gestations at different stages of development. Forster evidently uses the word figuratively, as in “additional or superabundant production or occurrence; the growth or accretion of one thing on another” (OED). In this sense, superfetation does aptly illustrate some of the nonlinear narrative dynamics I associate with modernism, and with a pleasing biological inflection suggesting that developmental and generational timelines are out of joint.

Just as Forster’s novels build rhythmic epigenealogies upon structural genealogies, his insistently anatomical view of narrative always points to “something extra” (75). Even “‘pattern’, which seems so rigid, is connected with atmosphere, which seems so fluid” (103). These claims don’t undermine Forster’s bodily narratology. As he puts it, “the time-sequence [story] cannot be destroyed without carrying in its ruin all that should have taken its place; the novel that would express values only becomes unintelligible and

---

98 Storm Jameson supplies the missing terms: “The rhythm…. is dictated by some necessity of the novelist’s mind. Or of his spirit. It is the faith by which the dry bones of plot and character live” (51).
therefore valueless” (29). Conversely, the existence of story, or chronology, is only intelligible insofar as it differs from discourse; that is, it is only thanks to discourse that story can be said to exist. Orlando amply demonstrates what Forster means when he insists that the “something extra” is separate from “time or people or logic” but cautions, “I do not mean something that excludes these aspects nor something that includes them, embraces them. I mean something that cuts across them like a bar of light” (74). Woolf calls the bar of light a rainbow, a leaf, a poem; either way, it is “intimately connected” (Forster, Aspects 74) with the harder, prosaic aspects of the novel: granite, a rock, a tree.

Speculating on what differentiates a novel from a life, Forster articulates one of Orlando’s central concerns, its combination of “both worlds” of fact and fiction (Woolf, Essays IV.475), the latter being what emits the “bar of light” (Forster, Aspects 74). “A memoir is history, it is based on evidence,” but “a novel is based on evidence + or – x, the unknown quantity being the temperament of the novelist; and the unknown quantity always modifies the effect of the evidence, and sometimes transforms it entirely” (Aspects 31). Not surprisingly, this distinction is structurally equivalent to his temporal distinction between “the tape-worm of time” and the novel’s “finer growths.” Once again Forster uses zoological language, again to pinpoint the dynamics that account for the modernist innovations on the bildungsroman: “I see these two movements of the human mind: the great tedious onrush known as history, and a shy crablike sideways movement” (118). In Howards End, as in A Portrait and Eyeless in Gaza, the “shy crablike sideways movement” allows the narrative to complicate if not elude “the great tedious onrush known as history” that is, so often, biologized as the inevitable forward movement of
evolution and the parallel forward movement of individual formation. *Orlando* is, however, unusual for showing it structurally as well as explicitly, through theory.

**Orlando as Metafiction and Fiction Théorique**

In *Orlando*, Woolf plays up the issue of “evidence + or – x,” and like Forster connects it to the tension between historical and human time. The narrator fears infection of fiction, stating unreliably that her “simple duty is to state the facts” (65); but as she frequently admits, the facts are sometimes inadequate, and she has had “to speculate, to surmise, and even to use the imagination” (119). These heterodiegetic issues are doubled and fleshed out in the connection between Orlando’s poem *The Oak Tree* and the real oak tree, a pairing that provides an easily examined, homodiegetic correlative of the novel’s formal dissociation between story time and discourse time. Crudely, the oak tree corresponds to the world of history and straightforward growth, to Forster’s “story”; it is the “backbone” of the novel (Forster, *Aspects* 17) or, as Woolf puts it, “the spine” (*Orlando* 324). The poem suggests the “crablike sideways movement” (Forster, *Aspects* 118) of Orlando’s mind and identities and thus the realms of “rhythm” and “fantasy” (*ibid.* 73ff, 120ff); it corresponds to “the finer growths” that story “supports” (*ibid.* 17).

I say “crudely” because of course the firm division between tree and poem is ultimately untenable, though conceptually useful—just like the division between story and discourse. The oak tree, indeed, easily suggests upward movement as it grows taller, but Woolf also stresses its growth in another dimension: as it grows upward it also expands outward, mimicking the alternative temporalities of Orlando’s wool gathering
and the narrator’s plot-stopping digressions.\textsuperscript{99} Bearing such nuances in mind, it is nevertheless productive to consider the oak tree as an objective correlative for Orlando’s growth, which is simultaneously ontogenetic and phylogenetic, and the poem as a map of her unusual developmental paths. The oak keeps clock-time, standing in for biographical truth, granite to the poem’s rainbow; Orlando lives almost outside time, but to be meaningful this timelessness requires a timekeeper. As Forster specifies, anticipating \textit{Orlando}’s narrator, even when time is irrelevant to a novel’s art, “in a novel there is always a clock” (20).\textsuperscript{100}

Brontë in \textit{Wuthering Heights} tried to hide hers. Sterne, in \textit{Tristram Shandy}, turned his upside down. Marcel Proust, still more ingenious, kept altering the hands, so that his hero was at the same period entertaining a mistress to supper and playing ball with his nurse in the park. All these devices are legitimate, but none of them contravene our thesis: the basis of a novel is the story, and a story is a narrative of events arranged in time-sequence. (20)

It is therefore “to the oak” that Orlando “attach[es] his floating heart” (19); centuries later, feeling “the bones of the tree running out like ribs from a spine this way and that beneath her” (324), Orlando finds comfort in her grounding in reality. Thus we can assess Orlando’s experience, character and development from the regularity of the tree’s life-cycle: “the oak tree flowered and faded so often before he came to any conclusion about

\textsuperscript{99} I use “digression” with a nod to Attridge, whose \textit{Peculiar Language} deconstructs the dichotomy between main plot and digression and thereby debunks the common tendency to privilege story over discourse.

\textsuperscript{100} “The novel is bound to be linear even when it seems to or attempts to deny linearity,” writes Ali Smith in \textit{Artful} (2013), a fascinating \textit{fiction théorique} for New Formalist times. “Even Woolf, who knew the novel form differently, being one of the few people successful in remaking it …, depends on chronology…. The flow of time and change in The Waves must still be held in a fundamentally consequential chronology between birth, death and birth in nine gestative sections” (31)—a biological analogy recalling my readings of Woolf, Joyce, Forster and Huxley.
Love” (101). The tree, growing older chronologically, highlights the linear maturation process that makes *Orlando* a bildungsroman, whose structure historically correlates with recapitulation theory and the soul-nation allegory. As the English national tree, the oak represents the rise and power of the nation, as well as the genealogy of its old families; thus in Conrad’s *The Secret Agent*, the “descent” of one of its few unambiguously English characters, Sir Ethelred, has “surpassed in the number of centuries the age of the oldest oak in the country” (136). As well as these historical, national and genealogical valences, the oak is a canonical example of entelechy (e.g., Harris 244) and *Bildung* (e.g., Hegel 7). Sitting under the tree, Orlando’s life is a microcosm of history: “his age—he was not yet seventeen” (16)—is neatly coupled with “the spirit of the age” (236), for “the sixteenth century had still some years of its course to run” (16). But the symmetry of sixteen years and sixteenth century, suggesting the parallel between ontogeny and phylogeny, won’t hold: Orlando is “a year or two past thirty” in the nineteenth (244) and thirty-six in the twentieth century. The failure of the age-Age isometry forces a kind of heterochrony into the developmental narrative, resulting in what biologists call *allometric scaling*—the uneven or differential development of individual parts.

Orlando’s many selves develop at different rates, in different directions even, for Orlando cannot “synchronise the … different times which beat simultaneously in every normal human system” (305). This inability has less to do with the oak tree than with the poem. Inspired by the tree, the poem is likewise a symbolic and structural analogue for Orlando’s development; but as a work of the human mind repeatedly revised, truncated, rewritten and reconceived, it crucially enlarges Orlando’s developmental possibilities and, by extension, increases the structural complexity of the novel as a bildungsroman. The
tree is basically a keeper of Orlando’s chronological age and ontogenetic maturation; the poem similarly reflects the body’s temporal continuity, being composed entirely on a single piece of foolscap, but its composition also mimics the elasticity of memory and the multiplicity of selves implied by this psychological version of time. “So fine [is] the sympathy … between them”—between Orlando and the poem—that her will and the poem’s “want[ing] to be read” (272) are one. Orlando is “a perfect rag-bag of odds and ends” which “nature” has “light stitched together by a single thread” (78), much like a roll of paper, sea-stained, blood-stained, travel-stained—the manuscript of her poem, “The Oak Tree.” She had carried this about with her for so many years now … that many of the pages were stained, some were torn, while the straits she had been in for writing paper when with the gipsies, had forced her to overscore the margins and cross the lines till the manuscript looked like a piece of darning most conscientiously carried out. (236)

Both Orlando and manuscript are textiles woven of ever-changing selves, a far cry from the notion of life or identity as “a single thread.” The attention paid to the poem’s physicality, the condition of the paper and clutter of writing, stresses the inextricability of mind and body in Orlando’s identity and development; her cumulative experience is fittingly described as “those scored parchments which thirty years among men and women had rolled tight in his heart and brain” (100). The inevitable implication is that the protagonist is the text, and the development of plot and of character a single process. The poem’s manuscript—rather than just its text—incorporates its own evolution and development (both apply here); its past is not written off, for it persists on the page in the palimpsest of deletions and additions.
The poem partially frees the narrative of Orlando’s development from the thematic and structural constraints of the traditional female bildungsroman. *The Oak Tree* contrasts tellingly with the nineteenth century, portrayed as an era of runaway fertility and literary volubility. Though “love, birth, and death were all swaddled in a variety of fine phrases,” the century boasts a surreal fecundity that reduces “the life of the average woman” to “a succession of childbirths” (229). Fascinatingly, this fertility extends to the nation and to literature. “The average woman,” we are told,

had fifteen or eighteen children by the time she was thirty; for twins abounded. *Thus* the British Empire came into existence; and *thus …* sentences swelled, adjectives multiplied, lyrics became epics, and little trifles that had been essays a column long were now encyclopaedias in ten or twenty volumes. (229, my emphasis)

The genealogical imperative produces progeny and big books alike, and it plays a causal role (hence “thus”) in the growth of empire. *The Oak Tree*, by contrast, begins as a “very short” poem and continues to contract as Orlando learns “the cardinal labour of composition, which is excision” (71). Gradually more condensed, the poem is paradoxically both regressing (from complex to simple) and progressing (from bad to good poem); it thus mirrors Orlando’s own ambivalent relation to the *Bildung* plot.

The publication of *The Oak Tree* heralds the end of Orlando’s long artistic maturation, an event which may seem to coincide problematically with the birth of her son. By the logic of the female bildungsroman, the birth would mark the end of her individual development. By being coupled with artistic growth, however, Orlando’s procreation actually invalidates the patriarchal equation of female development with achieving
motherhood: artistic and reproductive ends are traditionally incompatible for women. It would be easy to read the birth of her son as the beginning of her death, especially because it comes so near the end of the biography—her life. Death and reproduction are also implied in her decision to “bury” her book (324) at the foot of the real “oak tree” (323), as if it were an acorn launching a new generation. But Woolf thwarts this interpretation, both by “let[ting] the book lie unburied” (325) and by showing Orlando not at the end but, like the tree itself, “in the prime of life” (324), at “the oncome of middle age” (304).

In the poem, whose constructed nature is self-evident and its possibilities for revision almost endless, Woolf finds a perfect avatar for Orlando’s growth and selfhood. Conversely, she suggests that literary works, and particularly the prose narrative, develop like characters, like living organisms. It is here that the real tree becomes important, for Woolf’s fictional biography insists on fiction’s hybrid nature, its ability to juggle rainbow and granite, fact and imagination, lyric (The Oak Tree) and prose (the oak tree). The intimate connection between the poem and the tree is, fittingly, symbolized by Orlando himself: when he meets Elizabeth I, we are told that “she read him like a page” (25), which links him with his literary activities; a few lines later, Elizabeth adopts him as “the oak tree on which she leant her degradation” (26).

The poem relates to the tree as the “finer growths” relate to the “story” that “runs like a backbone” through the novel in Forster’s narratology (Aspects 17). Fittingly, then, the poem is first mentioned when Orlando sits on the roots of an oak he takes to be “the earth’s spine beneath him” (19). By 1928, having fulfilled its function as narrative backbone by giving flesh (or wood) to time and history since the sixteenth century,
the tree had grown bigger, sturdier, and more knotted since she had known it, somewhere about the year 1588, but it was still in the prime of life. The little sharply frilled leaves were still fluttering thickly on its branches. Flinging herself on the ground, she felt *the bones of the tree* running out like ribs from *a spine* this way and that beneath her. She liked to think that she was riding the back of the world. She liked to attach herself to something hard. As she flung herself down a little square book bound in red cloth fell from the breast of her leather jacket—her poem “The Oak Tree.” (323–24, my emphases)

For all the symbolic and associational differences between tree and poem, this passage stresses their affinities. The tree is associated with Forsterian story and pattern, clock-time, national history, and hardness (wood, bone, rock), and the poem with Forsterian plot and rhythm, *durée*, individual life, and softness (well-worn manuscript, leaf). The two represent and help tell apart two fundamental aspects of the novel, but the novel is ultimately formed by their inextricability: note that the tree’s hard trunk leads to the softness of its “fluttering” leaves, and that its vertical growth, as I mentioned earlier, is complemented by expansion in other dimensions—the outward (it is “sturdier”) and what is now be called the fractal (it is “more knotted”).

Through their inextricability, Woolf links oak and poem to the narrator’s self-consciousness, to her own critical writings on the art of fiction, and to *Orlando*’s construction as a novel. Linking the oak with story and the poem with discourse, the novel exposes—like “Oxen of the Sun”—the narratological and biological basis for the modernist bildungsroman’s innovations and ideological critique. As I argue in the Introduction, early twentieth-century biology suggested new narratives of organic
development, narratives more or less formally and ideologically freed from the “strait-jacket” of recapitulation theory (de Beer 141). The traditional bildungsroman reproduces recapitulation structurally, its double narrative of individual and historical “emergence” (Bakhtin, *Speech* 23) reinforced by a chronological arrangement suggestive of progress, gradual change and the realization of potential. In other words, recapitulation theory’s hold on nineteenth-century ideas of development is characterized, in the bildungsroman, by a more or less perfect overlap of story time and discourse time. New discoveries at the turn of the century, like Mendelian genetics and heterochrony, suggested developmental narratives in which discourse time is separate, if not quite independent from story time. Hence the importance of *Orlando’s* multiple temporalities, and hence the metafictional significance of its separate, but interdependent oak tree and *Oak Tree*.

The tree-poem is Woolf’s peculiarly modernist adaptation of aesthetic organicism, which for Goethe, Coleridge and other Romantic theorists equated the poem with a developing plant (Abrams 168–77). By coupling tree and poem, Woolf offers a similar, yet significantly modified model. The coupling is metafictional in that it parallels the novel’s temporal structure (i.e., the relation between story and discourse). Thus the tree’s growth and the poem’s composition are events in the narrative that mirror *Orlando’s* growth, but they are also embodiments of two interdependent but contradictory aspects crucial to Woolf’s theory of prose fiction: form and life. Though Woolf is often sceptical about theories of narrative structure, she also acknowledges that a novel is made from the interaction of “life” with a more or less lifeless formal substrate. At the simplest level, the rendering of “life” represented by *Orlando’s* pauses and ellipses depends on the possibility of deviating from “time on the clock” (*Orlando* 98); this, of course, is a key
feature of the modernist bildungsroman, which achieves many of its effects by decoupling story from discourse. Orlando’s timeless memory highlights the inadequacy of monocausal, linear history, but it also needs that history in order to rewrite it.

Likewise Orlando’s poem transcends but also needs “the thing itself” (17), the tree.

Near the end of the novel, the narrator reflects on the very conditions of its construction, bringing together the various problems raised by Woolf’s separation of tree from poem, structure from life—the diversity of the self, the multiplicity of time:

the most successful practitioners of the art of life … somehow contrive to synchronize the sixty or seventy different times which beat simultaneously in every normal human system so that when eleven strikes, all the rest chime in unison, and the present is neither a violent disruption nor completely forgotten in the past. Of them we can justly say that they live precisely the sixty-eight or seventy-two years allotted them on the tombstone. Of the rest some we know to be dead though they walk among us; some are not yet born though they go through the forms of life; others are hundreds of years old though they call themselves thirty-six. The true length of a person’s life, whatever the Dictionary of National Biography may say, is always a matter of dispute. For it is a difficult business—this time-keeping.

(305–06, my emphases)

A précis of Orlando as a whole, the passage also doubles as an oblique essay on the arts of fiction and biography, condensing ideas Woolf develops throughout her criticism.

With striking self-consciousness, the narrator relates the art of the novel to time and both to life (life is an art, according to the narrator, and an art wrought by one’s ability to fill time well). Life is not merely a vague word for experience, be it personal or social, but a
biological phenomenon; novels are not “dead” but living things; they do not merely rehearse “the forms of life”: they are life-forms.

Analysing such artful life-forms requires “dissect[ion]” and “Röntgen rays,” suggests Woolf (Essays III.45, ibid. 341). These approaches don’t give us the novel’s “life or spirit,” but they help us understand “the body of the book” (ibid. 160, ibid. 548)—the formal aspect of art’s “living form” (Schiller 101). No wonder the manuscript of The Oak Tree comes alive in order to secure its own publication: “The manuscript which reposed above her heart began shuffling and beating as if it were a living thing” (272, my emphasis). A microcosm of Orlando and Orlando, the poem demands to be seen as an organism. Given the modernist concern with representing, rendering or even modeling “life” in the novel, the poem’s apparent animation asks us to read Orlando not merely as a life (a biography) but as an actual life—a living portrait. After all, as Woolf writes in “Character in Fiction” (1924), “it is to express character—not to preach doctrines, sing songs, or celebrate the glories of the British Empire, that the form of the novel, so clumsy, verbose, and undramatic, so rich, elastic, and alive, has been evolved” (Essays IV.425).

There is, as Darwin writes in a different but—as it turns out—related context, “grandeur in this view of life” (Origin 490).
CONCLUSION

It would have been more amusing, as a spectacle, if they had had the chance to develop, untrammelled, the full horror of their potentialities.

—Aldous Huxley, Crome Yellow (87)

Development is not the magic word that either Haeckel considered it or that some modern biologists might wish it to be. At the risk of being as rash as Haeckel, I should like to say, however, that it has the capacity and promise still of becoming it. And when some great developmental biologist rises above our present concern with the concomitants of development, and learns to frame an answerable question as to the manner in which the developing organism as a whole progressively in time organizes its constituent processes, there will prove to have been some magic in having emphasized development after all.

—Jane M. Oppenheimer, “Embryology and Evolution” (218)

It seems that nature has tested one by one every way of being alive, of moving, and exploited everything permitted by matter and its laws.

—André Gide, Les Faux-monnayeurs (147)

There is a correlation between subtlety and variety in our fictions and remoteness and doubtfulness about ends and origins.

—Frank Kermode, The Sense of an Ending (67)

The novels featured in this dissertation envision developmental trajectories unlike those on offer in the traditional bildungsroman. They adopt new forms in order to rearrange the Bildung plot and broaden the range of life-histories it had hitherto endorsed. They imagine what other kinds of development might be possible and desirable. To think of modernist bildungsromans in this way defies two myths about modernism: first, the idea that modernism rejects its literary precursors, for its experiments with the Bildung plot are quite clearly variations on a nineteenth-century form; second, and more important, the unaccountably persistent notion that modernism is quietist and apolitical.

The authors examined in this dissertation all, in their various ways, envisioned a more inclusive, more ample and more flexible model of human life—individual, social and historical. “Expansion,” announces Forster: “That is the idea the novelist must cling to. Not completion. Not rounding off but opening out” (Aspects 116). Like so many human lives, “nearly all novels are feeble in the end” (ibid. 102), which is why Forster and so
many other modernists seek to free their novels from teleology, inexorable time and linear growth, especially “that idiotic use of marriage as a finale” (26). The bildungsroman traditionally follows time’s arrow, the line of entropy. To modify Temple’s aphorism from *A Portrait of the Artist*, it is maturity that is the beginning of death. No wonder Stephen, in *Stephen Hero*, distances his fate from that of his country, for Catholic Ireland, stuck in a different temporality than Europe, has failed to notice “that the Papacy is no longer going through a period of anabolism” (125). Yes, our lives do ultimately follow the entropic or catabolic line, but if this fact is relevant to the novel, it is not the point of a novel: “of course we grow old,” concedes Forster; “but a great book must rest on something more than an ‘of course’” (26). A similar need to break free from structural, temporal constraints spurs Woolf’s plea in “Modern Fiction”: “Life is not a series of gig lamps symmetrically arranged; life is a luminous halo, a semi-transparent envelope surrounding us from the beginning of consciousness to the end” *(Essays IV.160).* It is perhaps because the constraints are so clear in the bildungsroman, as one of the genres most determined by “biographical time” (Bakhtin, *Speech* 17), that it is the subject to so much modernist attention and experimentation.

In this dissertation, I have explored contemporary scientific ideas of “‘biological time’” (Bakhtin, *Speech* 11) that challenged the notion of life as a straightforward, progressive development. New biological theories of development and heredity, in my readings, become part of the story by which intellectual history “brought changes,” to quote Tobias Boes, “to the performative work done by the Bildungsroman” (*Formative* 42). These ideas suggested how the Bildung plot might “rest on something more than an ‘of course.’” For Forster, the givenness of “of course” indicates the failure to imagine new
developmental possibilities, like the happy ending he insisted upon for *Maurice* (“Terminal Note” 218). His “something more” is a refusal to be limited by received ideas about how we—as individuals, species and societies—develop and evolve: “If human nature does alter it will be because individuals manage to look at themselves in a new way. Here and there people—a very few people, but a few novelists are among them—are trying to do this”; the odds against “this” are long, admits Forster, for “every institution and vested interest is against such a search” (*Aspects* 118). Yet he dares to hope for a new developmental possibility for people both fictional and real; with a nod to Woolf’s “Modern Fiction,” he proclaims that “if the novelist sees himself differently he will see his characters differently, and a new system of lighting will result” (*Aspects* 118).

Past the inexorable chronology dominating our lives, past the “gig lamps symmetrically arranged” (Woolf, *Essays* IV.160): there lies Forster’s hope—and Woolf’s, Huxley’s, even Joyce’s—for the personal and transpersonal potential of fiction. If “history … is just a train full of passengers” moving forward in time, the novel offers another form of motion, a “crab-like movement” that sheds a wholly different kind of light on the way in which we can and might develop (Forster, *Aspects* 118).

From a narratological perspective, the bildungsromans I analyze share this formal peculiarity: they all experiment with time, using anachrony or non-linear tempos. Applied to a genre defined by a parallel between story and discourse, such experiments are inevitably attacks upon the organicist, uniformitarian assumptions of the post-romantic and post-Darwinian novel of formation. The result is an aesthetic reinvention of the genre, but also an intervention into the social, ethical and political implications attached to the idea of development, memory, time and history.
In her essay on *The Prime of Miss Jean Brodie*—a bildungsroman in theme and story, though not in structure—Judy Suh explains how discrepancies between story and discourse might perform such important tasks. The novel’s notorious “flash-forwards” (100), Suh argues, are its most effective resistance against the fascist ideal of organically “unfolding … national ‘destiny’” (95), a destiny mirrored in Miss Brodie’s hubristic vision of her students’ individual development. Prolepsis, Suh argues, may seem to confirm Miss Brodie’s—and fascism’s—deterministic and teleological fictions; but instead, by revealing unpredicted futures, it actually emphasizes the unimaginable possibilities and contingencies that play into development. I would add that by revealing the girls’ futures, prolepsis shifts our attention from the telos of maturity, enlightenment, vocation or destiny onto the process of becoming—the developmental how rather than its end. Suh locates “the narrative task for an anti-fascist novel” like *Miss Brodie* in its ability “to nurture the desire to begin again” (101); novels that formally enact this desire thus refine and redefine the bildungsroman’s objective of unfolding human potentiality.

As Hannah Arendt writes, “beginning, before it becomes a historical event, is the supreme capacity of man; politically, it is identical with man’s freedom” (qtd. in Suh 101). This vision is quietly literally tested by Martin Amis’s 1991 novel *Time’s Arrow*, but also, more quietly, by the repetitive patterns of *A Portrait*, by the genetic throwback in *Howards End* and by the analepses of *Eyeless in Gaza*. Arendt’s argument is echoed in a very different context by Stephen Jay Gould, who claims in his study of the Burgess Shale fossils that “the fascination and transforming power of the Burgess message—a fantastic explosion of early disparity followed by decimation, perhaps largely by lottery—lies in its affirmation of history as the chief determinant of life’s direction”
Wonderful 288). Gould’s primary foil here, like William James’s in “Great Men and their Environment,” is causal determinism, “direct predictability and subsumption under invariant laws of nature” (Wonderful 288). But his other target is equally evident—the view of “life’s history as the fulfillment of a divine purpose guaranteed to yield human consciousness after a long history of gradual and stately progress” (ibid. 288). For Gould, as for Arendt, the test is development stopped and begun again: “Replay the tape a million times from a Burgess beginning, and I doubt that anything like Homo sapiens would ever evolve again. It is, indeed, a wonderful life” (ibid. 289).

The desire to begin again and again is, as I wrote in the Introduction, a key concern of modernist fiction. It is one of the many temporal distortions through which the modernist bildungsroman reacts to developmental historicism and recapitulation theory. A particularly visible re-interpretation of human potentiality and its relations to history, it also connects the four novels examined in this dissertation, as well as other modernist novels of formation less evidently related to biology. Stephen’s epiphanic reversions in A Portrait indicate an unconscious search for origins, and thus as an inverted mirror image of the primary, conscious drive that produces the Bildung plot by impelling him towards “the end he had been born to serve” (165). His reversions reveal not a single, definitive origin but an embarrassment of origins, from the Deep Time of limestone formations; the classical Crete of Dedalus; the biblical rebellion of Lucifer; the “days of the thingmote” (Portrait 167); or the previous generation, when his father carved S. D. in a wooden desk (ibid. 89). Howards End, by valuing Mendelian reversion, thus creates the possibility of

101 Insisting upon the “distinction between laws in the background and contingency in the details” (Wonderful 290, original emphasis), Gould gets at how the modernist bildungsroman manages to incorporate simultaneously both clock-time (story, development, gradualism) and less linear temporalities (discourse, epiphany, disjunction). Time and development are, indeed, the background laws that make a modernist bildungsroman a bildungsroman; free play in the details is what makes it modernist.
stepping out of one family line and progressive trajectory in order to “throw back to a nobler stock” (320) and achieve progress founded on the past. The same is true of *Eyeless in Gaza*, which by exploiting the different biological phenomenon of neoteny enables Anthony to reroute his development towards a better future self and world. In *Orlando*, the protagonist’s repeated re-creation is embodied in her poem, which she revises into wholly new shapes over the centuries. Even its publication seems to mark a transition in its history, rather than a closure.

For the modernist bildungsroman questions the genre’s traditional ways of ending as much as the traditional association of beginnings and birth (Leander 15ff). *Orlando* closes not with a gesture to the future but with an arrival at the unnarratable present moment (329). In a sense, so does *A Portrait of the Artist. Howards End* wrests the ending away from the protagonists by opening the story of the next generation. And *Eyeless in Gaza*, though its ending is more traditional, is where Huxley first began to insist that what makes us human is our potential to think of means instead of ends, a theme he develops at length in *Ends and Means* and puts in verse in *Ape and Essence*: “ends are ape-chosen: only the means are man’s” (32). Like the other novels, Huxley’s bildungsroman seeks to dispense with the genre’s teleology, to shift its focus from ending to becoming. A similar shift from result to process was taking place at the same time among biologists, who were increasingly concerned with the processes and relative dynamics that drive development, less so with the results and comparative perfection of developed forms (Gould, *Ontogeny* 253).

It may seem paradoxical to say that evolutionary history offered the modernist bildungsroman a good dose of subjective time, or at least supplied a temporality distinct
from that of ontogenetic and personal development. This time is well known from
psychoanalysis, which called phylogenetic time racial memory, the archetype, or the
oceanic feeling. But psychoanalysis emerged entwined with embryology, evolutionary
theory and physiology, and together these kindred sciences were revealing how variously
a single individual can embody time. They show just how literally an individual contains
multitudes, how we embody multiple chronotopes, the flesh that our time and times
accrue; we are an aggregate of chronotopes, each one developing at its own speed.

At the end of Aspects of the Novel, Forster hints at the relationship between the novel,
non-linear temporalities, evolutionary history and the enlarged vision of development so
strikingly put forth by the modernist bildungsroman:

If we had the power or licence to take a wider view, and survey all human and pre-
human activity…. [t]he crablike movement, the shiftings of the passengers, might
be visible, and the phrase “the development of the novel” might cease to be a
pseudo-scholarly tag or a technical triviality, and become important, because it
implied the development of humanity. (119)

Thanks in no small part to contemporary biology, the modernist bildungsroman found
new forms of development—more complex, sometimes paradoxical, definitely bizarre—to chart. “All over the world,” laments Margaret in Howards End, “men and women are
worrying because they cannot develop as they are supposed to develop”; her solution
speaks to the modernist re-vision of Bildung: “Develop what you have” (ibid. 335). “It’s
one’s duty,” responds Anthony in Eyeless in Gaza, “to develop all one’s potentialities—
all of them” (77). In Stephen Hero, Stephen is nearly persuaded to take orders when
“ambassadors” for the Church promise that they can “allow the unusual character scope
and ease to develop and approve itself” (208–09). At a time of great societal, historical 
and cultural change, the life sciences made it easier for writers to imagine once 
unthinkable forms of growth, the possibility of Bildung even for the “unusual 
character[s]” previously barred from or resistant to it. And so the bildungsroman 
remained a vital genre: it helped and might yet help us see beyond fossilized ideas of 
development, enlarging the range of possible and acceptable life histories.
WORKS CONSULTED


---. *Peculiar Language: Literature as Difference from the Renaissance to James Joyce.*


---. *Speech Genres and Other Late Essays.* Ed. Caryl Emerson and Michael Holquist.


Church, Margaret. “Aldous Huxley’s Attitude toward Duration.” *College English* 17.7 (1956): 388–91.


Gaultier, Jules de. *La Fiction universelle: Deuxième essai sur le pouvoir d’imaginer.*


Gose, Elliott B., Jr. “Destruction and Creation in *A Portrait of the Artist as a Young Man*.” *


---. *Point Counter Point*. Toronto: Penguin, 1957.


---. The Will to Believe and Other Essays in Popular Philosophy; and Human Immortality. New York: Dover, 1960.


---. *Three Great Novels: Mrs Dalloway; To the Lighthouse; The Waves*. Toronto: Penguin, 1992.


