

The Poetics of Science in, and around, Nabokov's *The Gift*

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The Gift is a strange novel: pseudo-autobiographical yet fanciful, wandering—even careening—yet, in the end, tightly woven. It portrays the literary world of the Russian emigration in Berlin, but it does so through highly idiosyncratic eyes. It is a novel about love and literary growth, yet a full quarter of it—not a trivial amount, by any reckoning—describes the life of nineteenth-century socialist Nikolai Chernyshevsky, with another hefty chunk devoted to geographical exploration and butterfly hunting. Its heroine is Russian literature, yet alongside *Ada*, it is one of Nabokov's most scientifically engaged novels. How are we to resolve such discrepancies in the novel's apparently fissile energies?

Up to now, most scholarship surrounding *The Gift* has focused on its artistic form, its literary allusiveness, and its polemics with Nabokov's ideological opponents among the émigrés. It has been explored, as well, as a demonstration of Nabokov's artistic vision of the world (we are allowed to see the process of Fyodor's creative perception of reality and its transformation into art); also, from the psychological point of view, as an artistic refraction of Nabokov's own loss of his father.¹

Following the recent publication of *Nabokov's Butterflies* with the author's abandoned supplement to *The Gift*, "Father's Butterflies," and of professional evaluations and continuations of Nabokov's lepidopterological work by Robert M. Pyle, Charles Lee Remington, Kurt Johnson, Zsolt Bflint, and Steve Coates, scholars have begun to examine

¹The most comprehensive introduction to the novel and its cultural context, including much of its intertextuality, appears in Alexander A. Dolinin, "The Gift," in *The Garland Companion to Vladimir Nabokov*, ed. Vladimir E. Alexandrov (New York, 1995), 135–68. Stephen H. Blackwell, *Zina's Paradox: The Figured Reader in Nabokov's Gift* (New York, 2000), provides further cultural background and discusses the novel's artistic structure and vision. See also Leona Toker, *Nabokov: The Mystery of Literary Structures* (Ithaca, 1989); and Roger B. Solomon, "The Gift: Nabokov's Portrait of the Artist," in *Critical Essays on Vladimir Nabokov*, ed. Phyllis A. Roth (Boston: 1984), 185–201. For a psychological approach see Monika Greenleaf, "Fathers, Sons and Impostors: Pushkin's Trace in *The Gift*," *Slavic Review* 53 (Spring 1994): 140–58.

the relationship between Nabokov's scientific pursuits and his art.² Stephen Jay Gould, writing in *Véra's Butterflies*, suggests that rather than attempting to divine how Nabokov's scientific practice told on his creativity, or how his artistic interests affected his scientific vision, critics should instead contemplate how Nabokov's science and his art are both expressive of something more fundamental to his genius.³ Equipped as we now are with the knowledge that Nabokov was indeed a very accomplished scientist—documented in *Nabokov's Blues*, and in Boyd's and Pyle's introductory essays to *Nabokov's Butterflies*—we need to begin to address how it is that the scientific temperament and the artistic are mixed in one individual.⁴ A still greater challenge is the question of how the scientific (that is, objective, descriptive) and artistic (subjective, creative) expressions of Nabokov's genius in fact emanate from a common core. The culmination of Nabokov's years as a “Russian” author and butterfly collector, *The Gift* provides the perfect field on which to explore these murky origins.

As strange as the novel's blend of quirky social engagement, scientific exploration, and aestheticism may seem, there is in fact a very discernable governing principle behind Nabokov's integration of these disparate realms. As Sergei Davydov has shown, the novel is, in no small part, an “aesthetic exorcism” of Nikolai Chernyshevsky.⁵ Such an exorcism was necessary, from Nabokov's point of view, because, despite the role Chernyshevsky's materialism played in leading to the Bolshevik Revolution, he remained a revered figure among émigré intellectuals. As the aesthetic part of his social project, Chernyshevsky had severed art and reality; the materially “real” was unquestionably superior to the artistic “copy” (recalling one aspect of Plato, but without his dualism). Art had no special access to “truth,” its proper, subsidiary role being to educate and advance the cause of social progress as mapped out by the activists of the day. If art was not relevant to that progress, then it was elitist and bourgeois, of no use or value. Considerations of artistic “relevance” were also significant in the émigré community, where writers sympathetic to Georgii Adamovich, on the one hand, and Zinaida Gippius, on the other, felt that verbal expression of the specific reality of the émigrés' plight and loss was the only authentic literary mode for the times.⁶ In his novel, Nabokov impugns Chernyshevsky's materialist aesthetics by suggesting that it grew from a lack of observational acumen, that is, an ignorance about the material world. Although some of Fyodor's claims about Chernyshevsky's “myopia” have

²Vladimir Nabokov, *Nabokov's Butterflies*, ed. Brian Boyd and Robert Michael Pyle (Boston, 2000). “Father's Butterflies” is published in Dmitri Nabokov's translation in *ibid.*, 198–234. The Russian original was published after the translation: Vladimir Nabokov, “Vtoroe dobavlenie k *Daru*,” introduction by Brian Boyd, publication by Alexander Dolinin, *Zvezda*, 2001, no. 1:85–109. See also Kurt Johnson and Steve Coates, *Nabokov's Blues: The Scientific Odyssey of a Literary Genius* (Cambridge, MA, 1999).

³Stephen Jay Gould, “No Science without Fancy, No Art without Facts: The Lepidoptery of Vladimir Nabokov,” in *Véra's Butterflies. First Editions by Vladimir Nabokov Inscribed to His Wife*, ed. and ann. Sarah Funke (New York, 1999), 84–114, esp. 90.

⁴For an overview of the impact of Nabokov's butterfly work see Boyd, “Nabokov, Literature, Lepidoptera,” in *Nabokov's Butterflies*, esp. 9, 24, and 25. See also Kurt Johnson, “Recognizing Vladimir Nabokov's Legacy in Science: Where We Are Today; Where We Go From Here,” *Nabokov Studies* 6 (2000–2001): 149–61.

⁵Sergei Davydov, “*The Gift*: Nabokov's Aesthetic Exorcism of Chernyshevsky,” *Canadian-American Slavic Studies* 19:3 (1985): 357–74.

⁶See Aleksandr Dolinin, “Tri zametki o romane ‘Dar’ Nabokova,” in *V. V. Nabokov: Pro et Contra*, ed. Boris Averin et al. (St. Petersburg, 1996), 697–740.

been called into doubt, for Nabokov's purposes there were enough examples to paint an ironic portrait of a materialist out of touch with the material world.⁷ At the time an amateur lepidopterist, Nabokov allowed the empirical vantage point of the scientist to become mingled with the transforming vision of the artist, just as elsewhere he hints at the artistic implications of "making small things large and large things small," as with a microscope or telescope.⁸ If Nabokov's empirical science can trump Chernyshevsky's idealist materialism, then he has defeated the radical thinker on his own turf, and he can make a claim for the complete removal of (Marxist) materialism from the field of intellectual debate. That is part of the reason (structurally speaking) that Fyodor is the son of a scientist—a taxonomist—one who "name[s] the nameless at every step," who sees and categorizes previously hidden reality.⁹ But although Konstantin Kirillovich Godunov-Cherdyntsev is a scientist, he sees the natural world in something of an aesthetic light; moreover, he is surrounded by "a haze, a mystery, an enigmatic reserve" (p. 114), suggesting possibly a transcendent, metaphysical aspect to his being, notwithstanding his empirical calling. By merging the empirical and the mysterious in the figure of Fyodor's father, Nabokov attempts to redefine the notion of the "material" realm that is the subject of scientific research, tipping the balance between the "known" and the "unknown" in favor of the latter. As a result science, and especially the "science of the unknown," takes on a much greater role in the novel's poetics than has been previously discerned.¹⁰

In some ways, the novel demonstrates a kind of coalescence of art and reality, since it presents itself as both artwork (Fyodor's novel) and realistic narrative (the story of Fyodor's life in Berlin) simultaneously. The novel's world seems to have a kind of fictitious reality, but it is also "twisted, rebelched, rechewed" so that nothing but "dust" is left of the represented world (p. 364). The result is a setting where the tentativeness of everything around, the contingency upon attention, perception, and memory, is constantly on display. The novel's commitment to artistic perception implies also its openness to new phenomena; arguing against a materialist conception of a fully discovered world, it remains ready to amend itself, to incorporate or even create hidden and unexpected novelties.

Living creatures frequently benefit from protective coloration, as it makes them invisible to predators. This same strategy, it might plausibly be argued, is the primary literary device employed in *The Gift*, if not in Nabokov's entire work generally. The deception involved in placing an important object in such a way that it might not be easily observed was clearly one of Nabokov's chief delights in writing; hidden patterns, concealed

⁷See David Rampton's chapter on *The Gift* in *Vladimir Nabokov: A Critical Study of the Novels* (Cambridge, England, 1984), esp. 80.

⁸Vladimir Nabokov, *Speak, Memory* (New York, 1989), 118. Compare this with Nils Ake Nilsson, "A Hall of Mirrors: Nabokov and Olesha," *Scando-Slavica* (1969): 5–12, esp. 8.

⁹Vladimir Nabokov, *The Gift* (New York, 1991), 119. Further references in the text are to this edition.

¹⁰Another reason that "science," as the emblem of human progress, presses in upon the novel is the importance of science within the Promethean and utopian aims of Russian modernists—especially the futurists and constructivists. For a valuable discussion of the issues connecting science and art during the early twentieth century see Irina Paperno, "Introduction," in *Creating Life: The Aesthetic Utopia of Russian Modernism*, ed. Irina Paperno and Joan Delaney Grossman (Stanford, 1994), 1–12; and Paperno, "The Meaning of Art: Symbolist Theories," *ibid.*, 13–23. For a detailed look at metaphysical elements of *The Gift* see Vladimir E. Alexandrov, *Nabokov's Otherworld* (Princeton, 1991).

messages, and traces of others' thought and art constitute a major component of Nabokov's artistic material and method. When the novel at hand includes lengthy reflections upon the scientific and even metaphysical implications of mimicry and natural camouflage, then one feels compelled to look for the hidden treasure. But there is more to it than just a game of hide and seek, for when Nabokov brings scientific forms into his work, those forms reverberate harmonically with other elements. When Nabokov's art addresses scientific topics, it does more than refer to scientific descriptions of reality: it seeks to examine the way science aids in conceptualizing the world. The concepts science provides frequently can be metaphorical ones: the word "mimicry" itself is metaphorical, implying a degree of volition on the part of the copying creature. The metaphoric tendency is redoubled when we discover Konstantin Kirillovich's synonyms for mimicry: "nature's rhymes," "family jokes." When a creature mimics something, an association is born between two previously unrelated objects. There is a tension, Nabokov suggests, between the role these "metaphors" play in the natural world and the role they play in human contemplation; chains of associations in nature seem evocative of human mental life, and especially artistic life, in more than a trivial way. In humans such connections seem to lie at the core of creativity; in nature this holds as well. For Konstantin Kirillovich these "rhymes" are evidence that the unfolding of evolution is not purely mechanistic. Nabokov addresses this aspect of life and artistry more explicitly in *Lectures on Literature*, where, in relation to Marcel Proust, he proposes that "truth will begin only when the writer takes two different objects and ... *like life itself*, comparing similar qualities in two sensations, he makes their essential nature stand out clearly by joining them in a metaphor."¹¹ The hidden truth of "life itself" is contained in these relationships, which is why it cannot be accessed by bare lists of material facts or artifacts.

The role of the "scientific theme" in *The Gift* appears at first to be limited to the fragmentary biography of Fyodor's father, Konstantin Kirillovich, contained in the novel's second chapter. Of course, there are obvious radii from this hub in distant chapters, like the last, where butterflies are viewed and several, including one *Thecla bieti*, are figured on a dream ceiling as Fyodor meets his father's shade.¹² There are also negative traces of the motif in chapter 4, which foregrounds Chernyshevsky's (alleged) insensitivity to the natural world. However, the role of biology or ecology in the novel has tended to be viewed as a quiet reinforcement of some of the story's more obvious component parts: love for the beauty and mystery of life (including nature); the importance of careful, detailed perception; the tight bond between nature and art. A comprehensive accounting of the theme's presence in the novel suggests that it carries more weight than has been previously acknowledged, and that it goes well beyond the obvious lepidopterological motif, extending deep into the physical sciences. Through the materials presented below, I will argue

¹¹Vladimir Nabokov, *Lectures on Literature*, ed. Fredson Bowers (New York, 1980), 211 (emphasis added). Zoran Kuzmanovich's nuanced discussion of this passage suggests that when Nabokov writes, he seeks to "construct a metaphor that does justice to the unity of the two sensations created by the two images, to have those metaphors/images tell the 'real' story." See Kuzmanovich, "The Fine Fabric of Deceit: Nabokov and his Readers" (Ph.D. diss, University of Wisconsin, 1988), 200.

¹²Nabokov, *The Gift*, 354. The fascinating story of this elusive creature is given in Dieter E. Zimmer, *A Guide to Nabokov's Butterflies and Moths 2001* (Hamburg, 2001), 152, under "*Esakiozephyrus* (ex *Thecla*) *bieti*."

that the scientific theme stands close to the center of the novel's concerns. With regular and sometimes covert invocation of scientific personalities and concepts, *The Gift* makes a case for its own significance, and that of art generally, in the progress of all human discovery. The fragment "Father's Butterflies," finally rejected by Nabokov as an addendum to the novel, further deepens our insight into the scientific theme and its original role within the finalized text.

It would not be an exaggeration to suggest that *The Gift* overflows with scientists' names—there are over fifty mentioned or implied, not including Darwin or Einstein. As encyclopedic as it is, even Dieter E. Zimmer's monumental *Guide to Nabokov's Butterflies and Moths* misses a few key names.¹³ For the most part, when discussing Nabokov's science, scholars have focused on his lepidopterological pursuits. Although it is true that this field was his only area of scientific passion and expertise, Nabokov also was clearly aware of the major developments in other branches of the natural sciences, such as evolution theory, and even theoretical physics and Relativity, which loomed large in the years after 1919. His interest may have been passing, or even noncommittal, as reflected in his dismissive 1968 statement concerning "Einstein's slick formulae."¹⁴ However, we do not need to know whether Nabokov ever believed in the truth of Einstein's theories to recognize the trace of his thought in Nabokov's novel. Like Natural Selection after *On the Origin of Species*, the theories that brought on the New Physics caused a paradigm shift in the scientific conception of the world, closing the book on the predictable Newtonian universe.¹⁵ By incorporating these innovations, Nabokov explores the convergence of artistic and scientific modes of knowing reality. These discoveries required a creative leap—

¹³Here is a list of geographically and biologically oriented scientists named or alluded to in the novel; those marked with an asterisk have not been discussed by Boyd or Zimmer: Grigorii Grum-Grzhimaylo, Nikolai Przheval'skii, Grand Duke Nikolai Mikhailovich Romanov, Andrei Avinov, Andreas Bang-Haas, Gotthelf Ivanovich Fischer von Waldheim, Édouard Ménétrières, Eduard von Eversmann, Nikolai Kholodkovskii, Charles Oberthür, John Henry Leech, Adalbert Seitz, Otto Staudinger, Ruggero Verity, Jean-Henri Fabre, James Tutt, Nikolai Kuznetsov, Dmitrii Anuchin*, Jules Léon Austaut, Henry Walter Bates, Félix Biet, Hermann Blöcker, Arthur Gardiner Butler, Carolus Linnaeus, Henry John Elwes, Grigorii Nikolaevich Potanin, A. E. Pratt, Vsevolod Roborovskii, and Baron Ferdinand von Richthofen, an explorer who wrote letters about his adventures in China (called "Ritthofen" in *The Gift*, 124). "Father's Butterflies" adds the following: Ernst Hofmann, Kurt Lampert, Karl Berge, Hugo Fedorovich Christoph, Jacob Hübner, Jules Culot, Arnold Karlovich Moltrecht, Thomas Algernon Chapman, Hans Fruhstorfer, Lord Walsingham, Hans Rebel, Arnold Spuler, Roderick Murchison*, Sven Hedin, and Henry Rowland-Brown* (see footnote 52). Not fully identified so far are "Dawson" ("Father's Butterflies," 223), who perhaps was Sir John William Dawson, 1820–99, a paleontologist and anti-Darwinian theorist; and "Krivtsov" (*The Gift*, 113). See also the commentary in Vladimir Nabokov, *Die Gabe, Gesammelte Werke*, vol. 5, ed. Dieter E. Zimmer, trans. and comm. Annelore Engel-Braunschmidt (Hamburg, 1993), esp. 651–76. In a personal communication, Zimmer asserted that there are about twenty additional explorers hidden between the lines. Victoria N. Alexander proposes that Lev Semenovich Berg's monograph *Nomogenesis; or, Evolution Determined by Law* (1926; reprint ed. Cambridge, MA, 1969) (originally published in Russian as *Nomogenez ili evoliutsiia na osnove zakonmernosti* [n.a.]), which includes a chapter on butterflies, may have been another of Nabokov's sources at the time (personal communication).

¹⁴Vladimir Nabokov, *Strong Opinions* (New York, 1990), 116. It should be noted, however, that Nabokov's remark is highly ambiguous: it is made in connection with *Ada* and particularly its inserted treatise "The Texture of Time." In the same sentence, Nabokov asserts that "one need not know theology to be an atheist"—a pithy, if ambivalent, truism.

¹⁵By "New Physics" I mean the discoveries related to Quantum Theory and Relativity, which were known popularly as the "New Physics" for most of the twentieth century. More recently, the phrase has been used to refer to innovations and theories of the late twentieth century.

a knight's move, in Nabokov's favorite phrase—to escape the confines of classical physics. As a result, in *The Gift* art and science together embody the expansion not merely of knowledge, but of human cognition itself.

The presence, and rejection, of Darwin's theory as a full explanation of species variety serves more as a sign of the novel's scientific engagement than as a *profession de foie* of its author. One of the things that "Father's Butterflies" confirms is that Konstantin Kirillovich's comments about mimicry, designed to contradict the universal applicability of Darwinian Natural Selection, are not at all meant to imply a creationist view of species development (in the biblical sense of the "fingertip zap," as Kurt Johnson has vividly expressed it).¹⁶ Such a suggestion would downplay Konstantin Kirillovich the scientist, whereas in fact the reverse is the case. Darwinian theory is criticized precisely because Konstantin Kirillovich believes that there is a better *scientific* (theoretical) explanation of how species change and how they develop mimetic forms. In the ideas presented in "Father's Butterflies," Konstantin Kirillovich's theory, dubbed by his fictional critics a "lawless fantasy," represents a radical intuitive leap, an "acrobatic movement of the brain" away from accepted scientific notions (and for this reason, it is explicitly compared with the discoveries of Copernicus).¹⁷ Regardless of the real-world validity of Konstantin Kirillovich's proposal, within the logic of the novel it stands side by side with Darwin's theories and those of the New Physics as a departure from received ideas of how reality operates.

Two scientists mentioned in *The Gift* relate specifically to the development of evolutionary theory: Nikolai Kholodkovskii and (indirectly) Dmitrii Anuchin. By inserting these major participants in Russian debates about Darwin's legacy, Nabokov raises the stakes of his novel's engagement with science generally. Let us pause to consider briefly the role these two men played in Darwin's Russian reception.

The scientist whom Nabokov picked to be Konstantin Kirillovich's biographer in a fictitious encyclopedia was Nikolai Kholodkovskii (1858–1921), a major lepidopterist and evolutionary biologist at the end of the nineteenth century and the first decades of the twentieth.¹⁸ His prominent role in the Godunov-Cherdyntsev mythology is, in many ways, telling. Kholodkovskii was an unorthodox Darwinist, supporting in general the significance of the naturalist's discoveries but emphasizing also the limitations of Natural Selection as an all-explaining theory. Although, according to Alexander Vucinich, he was opposed to teleology, neovitalism, and all hints of metaphysics in biology, he nevertheless advised against seeing Natural Selection as "the only or almost the only factor responsible for such a complex phenomenon as organic development."¹⁹ In Kholodkovskii's view,

¹⁶Kurt Johnson, "Lepidoptera, Evolutionary Science, and Nabokov's Harvard Years—More Light and Context" (Paper delivered at the annual American Literature Association meeting, Cambridge, MA, May 2001), 33. The typescript was kindly provided to me by the author.

¹⁷Nabokov, "Father's Butterflies," 215.

¹⁸Kholodkovskii was one of the initiators of butterfly classification based on the structure of the male genitalia, as well as a literary translator of Goethe, Shakespeare, and others. See Nikolai Kholodkovskii, *Muzhskoi polovoi apparat cheshuekrylykh, sravnitel'no-anatomicheskoe izsledovanie* (St. Petersburg, 1886). See also Zimmer, *Guide*, 350.

¹⁹Quoted in Alexander Vucinich, *Darwin in Russian Thought* (Berkeley, 1988), 276, 276n.8. See also Nikolai Kholodkovskii, *Biologicheskie ocherki* (Moscow, 1923), 138. For Kholodkovskii, the main weakness of Natural

“natural selection is a controlling and choosing factor, but not a creative one: it concerns itself, so to speak, with the expediency of changes taking place within organisms; it does not create those changes.”²⁰ Nabokov must have been attracted by Kholodkovskii's eye for the unexplained creative element in nature; it is precisely this lacuna in Darwin's theory that Konstantin Kirillovich points to in “Father's Butterflies,” when he asserts (through Fyodor) that “a trillion light years would hardly be sufficient, even thanks to a series of happy coincidences, to disguise a multitude of disparate species by one and the same process (for instance, endowing a folded butterfly with the exact appearance of a certain variety of leaf with the artistic bonus of a realistic flaw: a small hole eaten through it by somebody's larva).”²¹ That is, random accumulated mutations, without some sort of explanatory creative impetus, would not, he argues, be sufficient to bring about a single example of protective mimicry, let alone the thousands that actually exist.²² Given the distaste of both Nabokov and of Fyodor's father for the “survival of the fittest,” it is not surprising that Kholodkovskii would be chosen to honor the doomed butterfly hunter after his death; the choice is even more apt when we consider Kholodkovskii's “second” career as a translator of Goethe and Shakespeare, again foregrounding the connection of art and science (though also pointing to some dangers: Fyodor calls one of Kholodkovskii's scientific translations “ridiculously poetical.”²³

As has been noted in recent work by Kurt Johnson, early in the twentieth century there was significant dissent from the mainstream version of Darwinist theory, fueling a debate which has perhaps changed course somewhat but remains active today. Of course, trumping Darwin's “struggle for survival” is vital to Nabokov's aesthetic conception of life and cosmos, in which creativity is the ultimate achievement, made possible only by freedom from toil. Dieter E. Zimmer points out that Darwin's phrase about “struggle” was particularly unfortunate for Nabokov's eventual attitude toward the theory; Zimmer observes that “evolution and sexual selection, far from being a deploy of ‘unskilled forces,’ has itself turned out to be refined and subtle and staggeringly complex.”²⁴ By entrusting the biography to Kholodkovskii, who was certainly more of a Darwinist than his fictional subject, Nabokov supplied Konstantin Kirillovich with something of an “official” pedigree, a (fictitious) recognition from his real-life peers, by the same token validating his doubts about Natural Selection.²⁵

Selection lay in the “absence of any explanation for the appearance of the first variations that underwent Natural Selection” (ibid., 136).

²⁰Kholodkovskii, *Biologicheskie ocherki*, 135.

²¹Nabokov, “Father's Butterflies,” 224.

²²See Zimmer's discussion of this line of argument in his *Guide*, 54–55; Zimmer's general discussion of Nabokov's critique of Darwinian natural selection runs from pp. 42–46 and pp. 54–59. See also Kurt Johnson's forthcoming article, “Lepidoptera, Evolutionary Science, and Nabokov's Harvard Years—More Light and Context” (esp. p. 47); and Victoria N. Alexander, *Neutral Evolution and Aesthetics: Vladimir Nabokov and Insect Mimicry*, Santa Fe Institute Working Papers, no. 01-10-057 (Santa Fe, 2001).

²³Nabokov, “Father's Butterflies,” 204.

²⁴Zimmer, *Guide*, 56.

²⁵There were other scientists throughout Europe who were advancing arguments against Natural Selection, often from neo-Lamarckian or creationist perspectives, and many of these were roundly attacked and discredited by Kholodkovskii in articles published at various times and collected in *Biologicheskie ocherki* (which was in V. D. Nabokov's library). Thus Konstantin Kirillovich's reservations about the theory represent intellectual rigor and consistency, rather than ideological tendentiousness.

Of course, being “real” is not always the best way to enter a work of fiction; sometimes it is best to don a mask. It was not uncommon for Nabokov to include names of real scientists in his works, attached discreetly to various fictitious characters (well-known examples are “Kretschmar” in *Camera Obscura*, “Turati” in *The Defense*, and “Dr. Zayats” [from “Seitz”] in *Ada*); one such reference occurs in *The Gift* in the person of the demagogic “Professor Anuchin,” who writes a highly critical, ideologically driven review of Fyodor’s *Life of Chernyshevsky*. Dmitrii Nikolaevich Anuchin, a well-known geographer and anthropologist (1843–1923), was a prominent Darwinian in the decades following the appearance of *On the Origin of Species*; he published Russian explications of Darwin’s *The Descent of Man* in newspaper articles and authored several entries concerning evolution in the Brockhaus-Efron encyclopedia. According to Vucinich, Anuchin was notable for resisting “grand schemes of cultural and social evolutionism”—that is, he was not a social Darwinist; however, one can tell from his jubilee article on Darwin in 1909 that he was an impassioned believer in Natural Selection, which, he observed, had changed not just biology but many other branches of science and thought as well.²⁶ Two other facts about Anuchin might have interested Nabokov: he wrote a sketch of the life of Nikolai Przheval’skii, whose descriptive accounts of central Asia were to become an inspiration for Nabokov and for Fyodor; and in 1897 he edited the translation of *Farthest North* by Fridtjof Nansen, the Norwegian explorer and, later, League of Nations Secretary For Displaced Persons, whose name—by way of the “Nansen Passports”—became synonymous for Nabokov with the humiliating statelessness imposed upon émigrés.²⁷ Anuchin remained in Soviet Russia after the revolution (at which time he was seventy-four years old) and became a member of the Soviet Academy of Sciences, a fact which, combined with his great enthusiasm for Natural Selection, may help explain his oblique and equivocal presence in *The Gift*, in contrast to Kholodkovskii’s positive role. It is also important to note that these allusions quietly emphasize the prerevolutionary significance of Russian science, with its active participation in European scientific debates.

Thus the presence of the biological sciences in *The Gift* serves largely to enhance the verisimilitude of Konstantin Kirillovich’s biographical and professional background, to promote the spirit of unprejudiced discovery and innovation, and to advance certain anti-Darwinian ideas. In particular, one can see how the utility of Natural Selection is counterpoised to the leisurely idleness that constitutes a significant part of Fyodor’s activity, especially in chapter 5. This curiosity-suffused idleness, and the creativity it engenders, becomes part of Nabokov’s proposed alternative model for evolutionary progress. In “Father’s Butterflies” as well, Konstantin Kirillovich hits upon his theory by accident, through the seemingly idle accumulation of superficially useless data. His idea of evolutionary progress is governed neither by mechanics nor by unconstrained chance, but rather

²⁶D. N. Anuchin, “Stoletie so dnia rozhdeniia Ch. Darvina,” *Russkie vedomosti* (1 February 1909): 3–4.

²⁷Alexander Vucinich, *Science in Russian Culture, 1861–1917* (Stanford, 1970), 216. Anuchin was also the president of the Moscow Society of Admirers of Natural Science, Anthropology, and Ethnography. See Anuchin’s essay on Przheval’skii in his *O liudiakh russkoi nauki i kul'tury* (Moscow, 1950); and Fr. Nansen, *Sredi l'dov i vorakie poliarnoi nochi*, trans. A. A. Kruber, ed. D. N. Anuchin (Moscow, 1897–98), 2 vols. in one.

by a certain kind of creative principle (which I will discuss further on in relation to Henri Bergson).²⁸

In contrast to the fairly straightforward thematic purpose of biology and exploration, the significance of the New Physics appears, both in its manner and in its import, much more puzzling. However, its presence is not really surprising, considering the overwhelming buzz surrounding General Relativity following upon the theory's independent physical confirmation in 1919 (when a star's visible light was seen to be displaced by the sun's gravity). Whatever the ultimate implications of Relativity may in fact be (and these are still a matter of debate and research), there can be no doubt that when it was first popularized, it called into question the very nature of physical reality. Just one month after Nabokov had arrived in Cambridge, an editorial in *The Times* of London on 7 November 1919 pronounced that "the scientific conception of the fabric of the universe must be changed," requiring "a new philosophy of the universe, a philosophy that will sweep away nearly all that has hitherto been accepted as the axiomatic basis of physical thought."²⁹ In light of such hyperbole, it would be surprising if the "New Physics" were completely absent from *The Gift*; after all, Einstein was living in Berlin not far from Fyodor's (and Nabokov's) haunts, on Haberlandstrasse, during the years of the novel's action; his famed presence in Berlin was part of the ambience of the times. Like the critique of evolutionary theory by Kholodkovskii and others, the New Physics provided Nabokov a very potent tool in his polemic with materialist thought, as now the most advanced science was raising doubts about the very "material" the world was made of.³⁰

The Gift's opening scenes might, in fact, be taken as a kind of extended reflection upon the New Physics. Fyodor stands on the street, watching as workers unload the belongings of a couple who have just taken an apartment above his new lodgings. The letters on the moving van's side draw attention; blue with a painted black "shadow," they seem "a dishonest attempt to climb into the next dimension" (p. 3), in this case the third, but with an eye toward the recently discovered fourth: time, as conceived in Relativity theory. Prominent on the van's front is a "star-shaped ventilator," recalling, perhaps, the star whose optical displacement verified the theory of General Relativity in 1919.³¹ Special Relativity

²⁸The theme of "accident" or "chance" in the supplement is significant: the manuscript ends with Konstantin Kirillovich, in an echo of Pushkin's poem "Vain gift, chance gift" ("Dar napasnyi, dar sluchainyi"), asserting that "'it was in vain that I said 'by chance,' and by chance that I said 'in vain' ... since, for all the plants and animals I have had occasion to encounter, it is an unquestionable and authentic...' The awaited final stress did not come" ("Father's Butterflies," 234) (*naprasno skazal*: "sluchainyi," i *sluchaino skazal* "naprasnyi") ("Vtoroe dobavlenie," 108). See Brian Boyd's fascinating discussion of this passage and its amended translation in "The Expected Stress Did Not Come: A Note on 'Father's Butterflies,'" *The Nabokovian* 45 (Fall 2000): 22–28; and Boyd's exchange with Gennady Barabtarlo on this question in Barabtarlo, "'He Said—I Said': An Afternote," *ibid.*, 29–36.

²⁹Quoted in Ronald W. Clark, *Einstein: The Life and Times* (New York, 1971), 237. See also Brian Boyd, *Vladimir Nabokov: The Russian Years* (Princeton, 1990), 166. On the same page of *The Times* (London) is the news article reporting the confirmation, and its title and subtitles are telling: "Revolution in Science. New Theory of the Universe. Newtonian Ideas Overthrown" (7 November 1919, p. 12).

³⁰It makes sense for this theme to remain hidden, however: it would have been difficult to harmonize it with the novel's more explicit themes without sacrificing artistic unity in the way Nabokov usually pursued it.

³¹See Clark, *Einstein*, 229–32. There is a link between the novel's star motif and its heroine/addressee, as well, since Zina's last name, Mertz [orig. Merts], has for Fyodor associations with the word for "twinkle" (*mertsanie*): "...polu-mertsaniia v imeni tvoem...." in Vladimir Nabokov, *Dar*, in *Sobranie sochinenii russkogo perioda v piati tomakh* (St. Petersburg, 2000), 5:337–38.

(referring to odd spatial and temporal relationships between discrete frames of reference or coordinate systems in motion relative to one another) comes to life in the following passage from the second paragraph: “until now, however, the street had revolved and glided this way and that, without any connection with him; today it had suddenly stopped; henceforth it would settle down as an extension of his new domicile” (p. 4). Playful images of time, space, and light continue to permeate the novel’s early pages, and they are nearly always shown to behave rather strangely: reflections of trees in a mirror swaying with a “human vacillation,” the shadows of branches that “hastened headlong toward substantiation, but dissolved without having materialized” (p. 7); finally, the departed moving van leaves behind a “rainbow of oil”—the traditional light spectrum here tilted toward the purple.³² All these shadows, reflections, and refractions foreground the many surprising properties of light, which were of course central to the development of Einstein’s work. The novel’s temporal flow takes a funny twist as well, recalling examples from Einstein’s own popularizations of Special Relativity, in which clocks on high-speed trains run more slowly than those at rest. Attempting to control the time of his arrival at the Chernyshevskys’, Fyodor “thought he was keeping his pace to a dawdle, yet the clocks that he came across on the way ... advanced even more slowly and ... almost at his destination, he overtook in one stride Lyubov Markovna” (p. 31). The quickly moving Fyodor finds that when he reaches his destination and *stops*, less time has passed than he had perceived (as would be the case for a traveler moving near the speed of light). Of course Nabokov also adds his own understanding of time’s quirky behavior by indicating *thought* and *feeling*—Fyodor’s impatience—as the agents of dischronicity (anticipating the space-time-thought spiral in *Speak, Memory*).³³ Time, space, light, and thought are again interwoven in the opening paragraphs of chapter 2, where Fyodor’s father, decades before and thousands of miles away, is imagined stepping into a rainbow—an act whose literal (but not imaginative) impossibility evokes, in a way, the uncanny implications of Einstein’s General Theory.

Time, as Fyodor notes, was “in fashion” in those days, although one might just as easily connect the novel’s temporal concerns with modernist explorations of memory, Bergsonian duration, and Proustian “lost time.” The specific connection to Relativity becomes more insistent when one considers the quiet presence of a few of the most important names surrounding the emergence of Einstein’s theory. The words on the moving van’s side, “Max Lux,” include reference both to Ernst Mach (whose name in Cyrillic looks just like “Max”) and to light (“Lux”);³⁴ the couple whose belongings are in the van are named “Lorentz”—pointing to Hendrik Lorentz, a physicist, the stepping stone between Mach and Einstein. Thus the novel not only encompasses a veiled reference to

³²Nabokov, *The Gift*, 29. It is particularly curious that the light spectra generated by many stars is in fact tilted toward the violet. Classification of star magnitudes based on spectral typing was worked out by Ejnar Herzprung and Henry Russell between 1913 and 1917. Brighter, hotter stars, in particular, are “bluer” in their spectral characteristics. Spectroscopy was a major new investigative tool in many branches of science.

³³Nabokov, *Speak, Memory*, 301. For further examples of unorthodox temporality in *The Gift* see Alexander Dolinin, “Nabokov’s Time-Doubling: From *The Gift* to *Lolita*,” *Nabokov Studies* 2 (1995): 3–40.

³⁴Brian Boyd notes how the words “Max Lux” also recall the fact that nothing can move faster than light (personal communication).

some aspects of Relativity theory but also points emphatically (though cryptically) to Einstein's immediate major precursors, reaching all the way back to the mathematician Nikolai Lobachevsky. The novel's opening pages encapsulate neatly and playfully the prehistory of the New Physics through its most important representatives.

Nabokov was certainly well aware of the work of Ernst Mach (1838–1916), who was an influential physicist and philosopher of science, a dominant intellectual figure from the 1860s to the early twentieth century (even more important in the Russian context, perhaps, he was extensively attacked by Lenin for his “idealism”).³⁵ In addition to being paired with the Latin word for “light” on the van's side, Mach also was recognized as one of Einstein's early sources of inspiration (Einstein's friend Michelangelo Besso gave him Mach's *The Science of Mechanics*, and Einstein wrote a eulogistic obituary in *Physikalische Zeitschrift* when Mach died in 1916). Mach's “incorruptable scepticism,” based on his intense aversion to abstract, nonempirically grounded theories, led him to develop persuasive arguments against the notion of Newtonian absolute space and time, insights which were crucial to the discovery of Relativity.³⁶ With its tendency to “stand time on its head” (as Fyodor does in his poems in chapter 1 and elsewhere) and disregard geographical separations (as he does repeatedly in chapter 2), *The Gift* reverberates with explorations similar to the Machian spirit.

Hendrik Lorentz (1853–1928) was a pioneer in the study of electrons and discoverer of so-called Lorentz contractions, which are changes in the physical dimensions of objects in motion relative to a fixed point. Einstein considered Lorentz to possess the greatest mind of anyone he had ever met; Jeremy Bernstein suggests that Lorentz's research might have come close to revealing relativity, had he not been so thoroughly devoted to the notion of a luminiferous ether.³⁷ In *The Gift*, Lorentz (Carl) is the name of the historical painter, or *Geschichtsmaler*, who lives in the flat above Fyodor's in chapter 1. As it turns out, the entomological, physical, and artistic themes converge in chapter 5 as it were under Lorentz's feet, on the ceiling of Fyodor's old apartment: beneath the apartment of an artist with a physicist's name, he dreams that he sees a multitude of painted butterflies as he awaits his father's entrance—the novel's epiphanic moment.

The third forefather of Relativity honored in *The Gift*, Nikolai Lobachevsky (1792–1856), is all but invisible in the opening scene, but his role is more prominent later on.³⁸ A

³⁵See Bernstein, *Einstein*, 130. For a detailed discussion of Mach's echoes in Nabokov's works see Stephen H. Blackwell, “Nabokov, Mach, and Monism,” in *Nabokov at the Crossroads*, ed. Jane Grayson, Arnold McMillin, and Priscilla Meyer (London, 2002), 121–31. Another possible, but less complete, allusion in “Max” is James Clerk Maxwell, who established the invariability of light's velocity, among other seminal contributions to theoretical physics. Also, Max Planck proposed quantum theory in 1900; he announced the discovery to his son while walking in Berlin's Grunewald, but Nabokov most likely did not know of that episode (Clark, *Einstein*, 67).

³⁶Paul Arthur Schilpp, ed., *Albert Einstein: Philosopher-Scientist* (Evanston, 1949), 21 (quoted in Clark, *Einstein*, 38). See also Gerald Holton, “Mach, Einstein, and the Search for Reality,” *Daedalus* (Spring 1968): 636–73; and Jeremy Bernstein, *Einstein* (New York, 1973), 130–33.

³⁷Clark, *Einstein*, 621; Bernstein, *Einstein*, 52–53. See also Delo E. Mook and Thomas Vargish, *Inside Relativity* (Princeton, 1987), 50–51. Of Lorentz, Einstein wrote, “everything that emanated from his supremely great mind was as clear and beautiful as a good work of art,” providing an interesting piece of evidence, from the other side, for the art-science unity (quoted in Clark, *Einstein*, 622).

³⁸There is a tempting possible indication that Lobachevsky is also in the opening scene, on the moving van, where the star-shaped ventilator is situated “on its forehead” (*na lbu*), from the Russian *lob*.

mathematician, rector of Kazan University, and one of a few independent discoverers of non-Euclidean geometry in the 1830s, Lobachevsky comes up in chapter 4, where Fyodor emphasizes N. G. Chernyshevsky's negative attitude toward the mathematical revolution-ary ("All Kazan was of the unanimous opinion that the man was a complete fool" [p. 240]). Later, one senses the absence of Euclid's Fifth Postulate (concerning parallel lines) when Fyodor muses over his strivings for "infinity, where all, all the lines meet" (p. 329). Nabokov mentions Lobachevsky several times also in his other works: he appears in *Nikolai Gogol*, for example, and clandestinely in *Ada*.³⁹ Most likely, Nabokov's interest in the mathematician arose due to the way that alternative geometries suggest the possibility of alternative realities or visions of reality; he also asserts (correctly) that Lobachevsky's discovery was crucial for the premises leading up to Einstein's development of Relativity theory.⁴⁰ His utility for Fyodor's book derives as well from Chernyshevsky's condemnation, which in turn exposes the failure of the radicals' "materialism" to explain the nature of "reality."

Although neither is named, Darwin and Einstein themselves emerge as latent subtexts, as the theories they advanced are extensively woven into the narration. If Darwin's significance is more obvious because of the prominence of the biological theme (even including a direct reference to the "struggle for survival"), winks at Einstein's work can be seen in the novel's playful relation to temporal flow, in the extensive invocation of light-related imagery in the scene surrounding the moving van, and even in the apparent "relativity" of Berlin's hold over Fyodor's perceptive faculties. Of course, the nature of Nabokov's polemic with Darwin has been discussed by quite a few scholars, most notably Dieter Zimmer, Kurt Johnson, Victoria N. Alexander, Charles Remington, and Brian Boyd, and it is really quite explicit in the text.⁴¹ In contrast, the New Physics is essentially hidden, its role not as easily explained in the context of Fyodor's personal and artistic growth.⁴² However, it is curious that Nabokov clearly chose to incorporate into his novel the two lines of scientific progress that had undergone the most extensive and revolutionizing development in the preceding seventy-five years. By weaving in references to the physical sciences, Nabokov bolsters and provides broader context for the presence of the novel's biological concerns. If something as solid as Newtonian physics could be superseded, then there was every

³⁹For a discussion of non-Euclidean geometry in *Ada* see Jeff Chimene, "Ada and Pangeometry," *NABOKV-L* (6 April 2001, listserv.ucsb.edu). It is also noteworthy that Fyodor disapproves of Yasha's dilettantish dabbblings in non-Euclidian figures, which come to represent the tortuous (and in Fyodor's eyes, banal) Yasha-Olga-Rudolf love triangle.

⁴⁰Vladimir Nabokov, *Nikolai Gogol* (Norfolk, CT, 1944), 145. In his commemorative article for *Physikalische Zeitschrift*, Einstein suggested that Mach might well have discovered Relativity, had his career peaked somewhat later than it did. See Einstein, "Ernst Mach," *The Collected Papers of Albert Einstein* (Princeton, 1997), 6:141–45.

⁴¹In addition to the works already cited (including Boyd's and Pyle's introductions to *Nabokov's Butterflies*) see Vladimir E. Alexandrov, "A Note on Nabokov's Anti-Darwinism, or, Why Apes Feed on Butterflies in *The Gift*," in *Freedom and Responsibility in Russian Literature*, ed. Gary Saul Morson and Elizabeth Cheresch Allen (Evanston, 1994), 239–44; and Charles Lee Remington, "Lepidoptera Studies," in Alexandrov, *Garland Companion*, 274–83.

⁴²Like Nabokov, Fyodor would at the very least have read something analogous to G. L. Lovtiskii's long article, "Ritm mirovykh dvizhenii," *Sovremennye zapiski* 17 [4–5] (1923): 249–80, which discussed the "new physics" in the light of advances made by Mach and Einstein. Fyodor could also have read (and Nabokov certainly did read) Henri Bergson's *Duration and Simultaneity*, with Reference to Einstein's Theory, first published in French in 1922 (Lovtiskii reviewed this book in *Sovremennye zapiski*).

reason to expect that Darwin's Theory of Natural Selection might also be surpassed, maybe even discredited, by a more radical explanation of natural history.

There is also good cause to suspect that *The Gift* includes a trace of the Copenhagen interpretation of quantum mechanics, developed in 1926–27 and popularized between 1931 and 1935. The most famous element of this theory is the Heisenberg Uncertainty Principle, according to which the act of observing a subatomic particle (the measurement of its position or velocity) in effect *establishes* either the location or the velocity, but not both; the other magnitude must remain uncertain. Thus the act of observation affects the possibilities of knowledge. Certain passages of *The Gift* do seem to evoke "Uncertainty," as when Fyodor quotes his father's warnings about "letting our reason ... prompt us with explanations which then begin imperceptibly to influence the very course of observation and distort it: thus the shadow of the instrument falls upon the truth" (p. 331). In the course of his rebuttal of materialism in *The Life of Chernyshevsky*, Fyodor claims that "anything which comes into the focus of human thinking is spiritualized. ... [T]hus, for those in the know, matter turns into an incorporeal play of mysterious forces" (p. 282). The very indeterminacy of the narrator's identity—sometimes first person, sometimes third, sometimes ambiguous—could be yet another embodiment of Heisenberg's principle. And at the novel's end, the Shchegolevs' departure for Copenhagen is meant to allow Fyodor and Zina to occupy the apartment alone (but of course they don't have the keys, and they never quite get there, anyway). The idea of "matter" as "mysterious forces" suggests at the very least an awareness of quantum theory, which together with Relativity makes up the New Physics.⁴³ Here again, we see the novel's artistic approach to "reality" as very much colored by the most revolutionary advances in scientific theory.⁴⁴

Without doubt, one of the novel's aims is to reopen a sense of wonder concerning the variety, complexity, and beauty of living organisms, to free them from the utilitarian slant of Natural Selection. The gaps in that theory, noted by Kholodkovskii, were the field of debate whereupon one might attempt to refine or improve the human understanding of nature.⁴⁵ In "Father's Butterflies," Nabokov takes on precisely this task, summarizing Fyodor's father's accomplishments as a lepidopterist and, most provocatively, as a theorist on species and speciation. In fact, the text as a whole provides some remarkable clues to how Nabokov worked to describe and present reality as an inherently artistic medium. The addendum was apparently written after the novel was completed and published; Brian Boyd has established the year 1939 as the most likely date of its composition. Although the text adds no story material (unless one counts the anecdote about Fyodor reading a forgotten book while his father chats with a friend about Pushkin), it does significantly deepen our knowledge of Fyodor's relationship to butterflies and to his father's work. In

⁴³See footnotes 15 and 35.

⁴⁴I am grateful to Dana E. Dragunoiu for helping me work out these issues, which point also to Nabokov's suggestion that "bare facts do not exist in a state of nature, for they are never really quite bare"—that is, facts are always tainted at least by human perception (Nabokov, *Nikolai Gogol*, 119). Dragunoiu's dissertation also includes a subtle discussion of Konstantin Kirillovich's "mirror of nature" metaphor ("Father's Butterflies," 216), a troubling figure which has striking implications for the ontological status of "reality." See "'The Universe Embraced by Consciousness': Nabokov's Philosophical Domain" (Ph.D. diss., University of Toronto, 2000), chap. 2, esp. pp. 116–17.

⁴⁵See footnote 19.

The Gift, butterflies are primarily emblematic of nature's wealth and resourcefulness, the magic of mimicry, the glory of scientific discovery, the inadequacy of Darwinian theory. In "Father's Butterflies," we hear something more of the fundamental components of Fyodor's personal interaction with the science and the art of butterflies. In the first part, we read of how Fyodor himself explored the scientific world centered upon Lepidoptera. Since butterflies represent both a scientific and an aesthetic object, one can view them from either perspective, or from both. What emerges as most striking in Fyodor's description of his pursuit is that, for him, practical knowledge of butterflies is itself associated with artistic craft and artistic perception alongside of scientific examination.

In "Father's Butterflies," Fyodor gives a summary of his father's "spherical" species theory. Although Konstantin Kirillovich's theory does spend some time rebutting Natural Selection as an explanation for detail in mimicry, the larger part of it centers on the nature of species development, independently from other theories of evolution. The gist of the theory is that each species is in fact a sphere of variation, the sphere capturing geographical (that is, spatial) variety along its equator, while variation over time constitutes the sphere's central meridian (the parallels with the "space-time" of Relativity should already be obvious). These spheres, or bubbles, arise through inherent but mysterious mechanisms from the remains of previous species-bubbles that have "burst," in an ongoing, forward-moving process. How, exactly, speciation and variation occurs is not addressed, although there is a strong affinity between Konstantin Kirillovich's theory and Henri Bergson's notion of "creative evolution." In this sense, nature is *telic* (or goal-oriented) because it tends toward ever greater complexity by means of an inherent *creative principle* (likewise, as Konstantin Kirillovich sees it, "nature grows wiser as time passes").⁴⁶ Bergson proposed a model that seems closely related to Konstantin Kirillovich's: "Evolution would fain go in a straight line; each special evolution is a kind of circle. Like eddies of dust raised by the wind as it passes, the living turn upon themselves, borne up by the great blast of life. They are therefore relatively stable, and counterfeit immobility so well that we treat each of them as a *thing* rather than as a *progress*, forgetting that the very permanence of their form is only the outline of a movement."⁴⁷ Fyodor believes that his father's theory is meant to be all but incomprehensible to those who do not make the necessary intuitive leap at the outset. In the real world of Nabokov scholarship, the Russian entomologist Sergei Sinev relegates the theory to "fantasy," whereas other scientists and scholars—notably Kurt Johnson and Victoria N. Alexander—are not so sure.⁴⁸ There is, at present, some

⁴⁶Nabokov, "Father's Butterflies," 219. Victoria N. Alexander observes that "Bergson argued that functions [i.e., adaptations] dependent as they are on interpretation (or *Perception*, to use his term) can have an unpredictable effect on the direction of evolution. In this view, *telos* includes the aspect of originality and must be *emergent*, not prespecified" (*Neutral Evolution*, 9).

⁴⁷Henri Bergson, *Creative Evolution*, trans. Arthur Mitchell (1911; reprint ed. Mineola, NY, 1998), 128. Elsewhere (p. 171), Bergson refers to species variation in terms of the circumference of a circle in relation to its center (the very same language we find in "Father's Butterflies," for example, p. 217). Although beyond the scope of this article, it would be worthwhile to explore thoroughly the parallels between Konstantin Kirillovich's and Bergson's thought on evolution.

⁴⁸Although most recent scholars conclude that Konstantin Kirillovich's (and implicitly Nabokov's) early thoughts on detailed mimicry are invalid, Alexander suggests that his spherical theory is quite similar to very recent theories of "neutral evolution," which help to explain the mechanisms behind "punctuated equilibrium"—the theory that evolution occurs not continuously, but in occasional intense bursts (*Neutral Evolution*, 19). Alexander's essay also includes

debate about whether certain aspects of Nabokov's scientific work and thought might have been extraordinarily insightful for his day.

Given the phenomenological emphasis that Nabokov puts on our experience and knowledge of the world (the idea that we "know" only our mental representations), it is not surprising that the vocabulary he gives to Fyodor and his father begins to slip away from the concrete terminology typically associated with the natural sciences. For at the core of Konstantin Kirillovich's theoretical supplement we find the proposal that each animal species is not just analogous to, but is in fact, an *idea*, "the original of a being, nonexistent in our reality but unique and definite in concept."⁴⁹ This theory emerges logically from the proposal, also contained in the supplement, that nature itself is analogous to consciousness, thereby allowing consciousness to represent and perceive hidden aspects of nature. What distinguishes this theory from Plato's eternal forms is that in Konstantin Kirillovich's "universal consciousness," species, as ideas, are not eternal but instead most decidedly ephemeral, and like the mental constructions that reflect and animate the world, they come and go, thrive and decline in a steady progress. This insistence on the primacy of a species' abstract essence, as opposed to its material form and reality, fully corresponds to and elucidates Fyodor's willingness to see past certain troubling limitations placed upon him by his dreary Berlin surroundings and to supplement his existence through mental exuberance.

Intriguingly, Fyodor complains that he has access only to a fragmentary English translation of his father's mischievously concise theoretical treatise, supplemented by "Murchison's" three-hundred-page exegesis, and thus he must render its concepts back into Russian for his summary. This situation echoes and develops further Pushkin's treatment of Tat'iana's letter in *Eugene Onegin*, where the poet must translate his heroine's letter from French to Russian. I find it particularly curious to recall how, in his commentary, Nabokov translated Tat'iana's letter "back" into French, even though the French text in fact never existed beyond Pushkin's imagination. That activity, like Fyodor's here, demonstrates Nabokov's interest in derivative texts with absent sources, a situation analogous to the relationship between today's natural world and the history of evolution: the present "text" of life and the inaccessible past, viewed only through the fragmentary fossil record.

This very fact has a subtle relationship to the contents of the twice-removed treatise, as it puts special emphasis on the inaccessibility of the original, that is, the textual "truth," while simultaneously suggesting problems that arise from the layering of knowledge, discourse, and experience within memory. In light of these problems, there are three essential aspects of "Father's Butterflies" to which I would like to draw attention: first, its treatment of a butterfly's reality in perception; second, the role of artistic creation and

an important overview of early-nineteenth century work on teleomechanism in evolution, work which Nabokov may well have known. For independent commentary on Godunov-Cherdyntsev's speciation theory see Kurt Johnson, "Recognizing Vladimir Nabokov's Legacy in Science"; and Sergei Sinev, "O 'Vtorom dobavlenii k *Daru*,'" *Zvezda*, 2001, no. 1:110–11.

⁴⁹Nabokov, "Father's Butterflies," 216. Compare this with Bergson, *Creative Evolution*, 103: "If, on the contrary, evolution is a creation unceasingly renewed, it creates, as it goes on, not only the forms of life, but the ideas that will enable the intellect to understand it."

perception in the description of butterflies; and third, certain peculiarities in the definition of “species” as a concept. Taken together, these three elements create a distinct image of Fyodor’s efforts, perceptible also in *The Gift* proper, to redefine reality itself. In *The Gift*, Nabokov is interested in science not so much as a method of discovering truths, but rather as a tool to conceptualize the world. Thus even while deploring systematic inaccuracies perpetrated by others, Konstantin Kirillovich himself, through Fyodor, presents ideas that lead one far from empirical observation. Appearing in the novel mostly as the fancies of an imaginative artist, in the addendum these efforts extend assertively into the natural sciences, and Fyodor seems to take his struggle with the “everyday world” down to the level of the precise scientific datum: it is as if he wants to prove the world’s dependence on his creative perception by bringing to life the most minute and unnoticed aspects of the empirical realm (as, later, Nabokov would claim that “average reality begins to rot and stink as soon as the act of individual creation ceases to animate a subjectively perceived texture”).⁵⁰ Consider, for example, his self-description as a passionate young student of butterflies, in which he seems to assert that specimens in a collection were not an adequate demonstration of nature’s delicacy, complexity, and variety:

I personally belonged to the category of *curieux* who, in order to acquaint themselves properly with a butterfly and to visualize it, require three things; its artistic depiction, a compendium of all that has been written about it, and its insertion within the general system of classification. With no words and no art, without a penetrating and synthesizing process of thought, for me a butterfly would remain incomplete.⁵¹

Without words, art, and system, the butterfly is unfinished, not fully represented in his consciousness, and hence—not real. Thus, a butterfly whose painted image, classificatory history, and verbal description are known to Fyodor is more complete in his mind than an actual preserved specimen without any one of the three refractions through consciousness. By asserting the centrality of the human consciousness in establishing the world’s content, he begins a process of reevaluating the world from a perspective in which creative consciousness plays an essential part in the full realization of nature. Indeed, Fyodor invokes Henry Rowland-Brown, who, in describing “the iridescence of truth” in Konstantin Kirillovich’s *Butterflies and Moths of the Russian Empire*, challenges accepted notions of art’s inferiority to nature, as in the following passage emphasizing the power of artistic representation in the book’s illustrations:

Many black-colored diurnal butterflies, when very fresh, have a striking metallic or *moiré*, blue-green sheen, which does not survive in prepared specimens. But certain black satyrids as well, when struck by the light, suddenly glow with the gloss of green inks and thus the master’s portrait expresses the essence of the butterfly better than the specimen itself in the collection.⁵²

⁵⁰Nabokov, *Strong Opinions*, 118.

⁵¹Nabokov, “Father’s Butterflies,” 203–4.

⁵²Ibid., 207. Henry Rowland-Brown (1864–1922) was a well-known lepidopterist, author of *Butterflies and Moths at Home and Abroad* (London, 1912), secretary of the Entomological Society of London, and a staff member at *The Entomologist*.

Or again, when Fyodor observes of the illustrations in his father's *magnum opus*: "The illustrations are still more perfect—the downy, velvety texture, the blurry translucence of various families of 'moths' are rendered so delicately that you would be afraid to run your finger across the paper."⁵³ Thus by dint of a verbal sleight of hand, Fyodor conveys the idea that the artist's image is at least as good, perhaps better than a prepared (dead) specimen, and nearly as good as a fresh catch or even, one suspects, a butterfly on the wing—not necessarily because it most perfectly represents the butterfly *visually*, but precisely because it is art: it embodies the same creative miracle that rests, according to Konstantin Kirillovich, at the nucleus of life. Here art matches nature, not merely in representation but in creative energy and in deception; the reader's hesitancy over the wings' "blurry translucence" pays art the ultimate compliment: recognition of its perfect mimicry.

To Fyodor, if the work of the artist is nature's equal, then the explicit artistry of nature itself presents a kind of anticipatory puzzle, whereby the markings of the butterfly's wings prefigure the efforts of future artists to capture them in ink or paint. It is as if in fact the butterfly had not achieved its complete expression in worldly reality *until* it had been fully perceived and painted:

How lovely it is, by the way, how one's eye is caressed by, the dark-cherry forewing, traversed by a mauve-pink stripe and adorned at its center by the golden emblem of its genus, in this instance a tapering, bowed half-moon—and if it is hard to render the flowery velvet of the background, what is one to say of the "emblem," which, on the actual moth, resembles a dab of gilt redolent of turpentine, and must therefore be copied (and recopied!) in such a way that the painter's work transmits, besides all the rest, a resemblance to the work of a painter!⁵⁴

This interdependence of the empirical realm and human attention, what Nabokov elsewhere calls "creative perception," amounts to a subtle departure from the Newtonian universe. Nabokov suggests here that physical reality fully exists only when it is actively, creatively perceived; and that human creative perception—"the foreseen and inevitable spectator, our intelligence of today"—is in fact anticipated, even prefigured, in the nonhuman natural world, recalling again the important role of perception in the work of Bergson and Heisenberg.⁵⁵ It is most appropriate in this context that Fyodor brings up the myth of Galatea and Pygmalion, since it is in precisely this story that an artist creates a statue which, in response to the artist's loving attention, comes to life and fulfills his creative vision for it. In *The Gift*, Fyodor's art calls Zina into his life, that is, brings her to life *for him*, and they move on together, creatively and artistically. In a sense, this myth, describing both the artist's passion for his work and the living reality taken on by all true art, affirms the power of creative consciousness generally to bring to life a world that, according to Nabokov's private ontology, is incomplete when not illuminated by loving perception, when not creatively embodied.⁵⁶

⁵³Nabokov, "Father's Butterflies," 209. Johnson and Coates assert that "early illustrated books of Lepidoptera are works of art in themselves" (*Nabokov's Blues*, 115).

⁵⁴Nabokov, "Father's Butterflies," 211.

⁵⁵*Ibid.*, 220.

⁵⁶This reference to Pygmalion, along with the myth's presence in *The Gift* itself (see Blackwell, *Zina's Paradox*, 139–40), is especially intriguing in the context of the Silver Age fascination with the theme as discussed by Irene

In order to decide what function, beyond the autobiographical, the scientific theme performs in *The Gift*, we need to consider both its explicit and its latent components. As I suggested at the beginning of this article, something is to be gleaned from the fact that the two most prominent thinkers in the natural and physical sciences are not named in the novel. The twin tracks evoking Darwin and Einstein represent departures from longstanding scientific tradition and redefinitions of how humanity understands nature at the most fundamental level. Concealed in the novel, their presence hints at a similar aim, or at a revelation of similar impact, within Konstantin Kirillovich's work, and Fyodor's too, and by analogy within the practice of the creative arts more generally as well. The first of these angles suggests that the novel's fascination with scientific revolution is meant to point toward the epochal significance of Konstantin Kirillovich's classificatory and theoretical work; this interpretation finds some support in his name: after all, Constantine was the founder of the Byzantine Empire, while Cyril is credited with designing the first Slavic alphabet. However, the idea of innovation and foundation, prominent in the "Father's Butterflies" addendum, actually serves to underscore the importance of Fyodor's own creative activity as representative of all artistic endeavor, placing creative achievement on a plane with scientific discovery.

Even if Darwin and Einstein do not receive Nabokov's unalloyed approval in his fiction, their work does emphatically expand the field of human awareness in relation to the observable world. Art does the same. The lifting of the old backdrop of consciousness, even if tentative or incomplete, opens the way for imagination to reach further still, ever increasing the field of human ratiocination. The tentative nature of that backcloth implies the immanence of more that is yet to be discovered and a world which is saturated by the unknown.

One way to approach an understanding of the connection between art and science and "reality" for Nabokov is to consider the overarching dominance of circles, spheres, cyclicity, and spirality in *The Gift*. This persistent theme is reinforced by what we read in "Father's Butterflies." In the novel (and in Nabokov's work in general), spirality may be seen both as a hint at metaphysics and as a kind of ludic gesture, the means by which the author implies that the artifact transcends its mundane limits and the way he propels the reader into successive trips through the narrative.⁵⁷ "Father's Butterflies" tells us something about precisely how Nabokov sought to incorporate circularity into a broader artistic and philosophical construct. This significance begins to emerge in Konstantin Kirillovich's description of species and genera as spherical networks of what might be called natural

Masing-Delic in "The Living Work of Art: The Symbolist Pygmalion and His Antecedents," in Paperno and Grossman, *Creating Life*, 51–82. However, for Nabokov the theme is more evocative of the mysterious, life-like qualities already inherent in all art (and vice-versa), in contrast to the Symbolist notion of using the power of art to overcome death, to animate the inanimate, as presented by Masing-Delic.

⁵⁷Nabokov, in *Speak, Memory*, refers to "the essential spirality of all things in their relation to time," and sees his own life as a "colored spiral in a small ball of glass" (p. 275). One is also reminded of Konstantin Levin's musings in *Anna Karenina*: lying in the grass and reflecting upon various theories of human evolution and existence, he thinks, "In an infinity of time, and in infinity of matter, in infinite space, a bubble, a bubble organism, separates itself, and that bubble maintains itself awhile and then bursts, and that bubble is—I!" (Leo Tolstoy, *Anna Karenina*, trans Louise and Aylmer Maude [1918; reprint ed. Oxford, 1995], 782). Here, of course, Levin is calling into question a purely materialistic interpretation of the world.

ideas; cyclicity receives a parallel evolutionary expression in the passage above (about the turpentine-redolent wingspot), where the creativity of human beings seems to be anticipated and prefigured by the prehuman subjects of human art, while this art in turn surpasses those subjects, producing a superior, almost a more real, reality. In another passage, Fyodor summarizes the underlying principle of his father's taxonomic theory, hinting at a kind of interactive spirality involving both nature and consciousness:

It would be more accurate to say, though, that it [evolution, species development] was not the work of the wind, but some energizing, thought-engendering rotation—not just the earth's rotation, but the even force that so festively animates the Dance of the Planets that is the universe. The idea of rotation acting upon the ferment of life, and *provoked by that ferment itself* (*vyzvannoe eiu zhe*), is what gave rise in nature to the lawlike regularity of repetition, of recognition, and of logical responsibility, to which the apparatus of human ratiocination, the fruit of the same agitated woodlands, is subordinate.⁵⁸

This passage, which looks at first like an innocent metaphysical musing (hinting at a feedback loop, or a virtuous circle), takes on greater significance when we recall the structure of *The Gift*, with its multiple and overlapping circles and spirals, and the story that almost became the “first” addendum to the novel, “The Circle,” about Fyodor and his sister narrated by an outsider. Not only does this story, too, mimic—with far greater explicitness—the novel's circular form (it begins with the phrase, “In the second place,” while its last sentence starts out, “In the first place,” and seems to leave the story hanging, were it not for the enigmatic first sentence), but Nabokov refers to it as a *satellite* of the original novel, echoing the circular motions implied in his phrase, the “Dance of the Planets.”⁵⁹ Thus the novel and all of its textual leftovers and offshoots are designed to express and align with what Fyodor (with his father) is proposing as the deepest rhythm of the universe, a rhythm and cycle that carry on in conscious creativity. Just as species themselves are mere forms of ideas, so also the products of human creation, Fyodor insists, are new ideas leading to new species and new aspects of reality. The human mind is but the most apparent part of this cycle:

Human intelligence, with all its limitations and rights, inasmuch as it is a gift of nature, and a perpetually repeated one, cannot fail to exist in the warehouse of the bestower. It may, in that dark storehouse, differ from its species seen in sunlight as a marble god is distinct from the convolutions of the sculptor's brain—but still it *exists*.⁶⁰

By aligning, even equating his art with the process that brought about the world's current exuberant state, Nabokov in *The Gift* makes his strongest claim for the centrality of art's role in moving the world toward future forms. Art for Nabokov was thus the leading edge of evolutionary development, the most valid earthly token of the unknown and the unsuspected.

⁵⁸Nabokov, “Father's Butterflies,” 225–26 (emphasis added).

⁵⁹“Foreword,” *The Gift*, 1963 (n.p.).

⁶⁰Nabokov, “Father's Butterflies,” 219.