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Abstract:

The importance of Charles Darwin's book, *On the Origin of Species* (1859), cannot be overstated, both in terms of (the history of) evolutionary biology and culture-wise. The book and the theory of evolution by natural selection presented therein eliminates the need for an explanation of a superior power in all that is related to the diversity of biological species, and thus provides a scientific and materialistic theory for "creation". The book and its author have become pivotal in secular culture, and the focus of attacks by various religious groups. With about 500 illustrated covers of a book whose importance goes beyond the scientific field to which it belongs, it is interesting to study how the ideas appearing in Origin of Species are illustrated in its many editions, whether there are recurring motifs in the illustrations, and if so, what their meanings are. The abundance of illustrated covers of *Origin* provides virtually controlled conditions for a study of the unique way in which concepts transfer to the public. Such an investigation must begin by examining the link between text and cover image. Accordingly, my aim is to map and classify the *Origin* motifs that appear on the covers of the various editions, and how they are brought to bear, toward determining which are being transferred In my paper, I draw on two related concepts first introduced by W.J.T. Mitchell in his book Picture Theory: the "imagetext", defined as a composite of picture and

CHARLES DARWIN AND VISUAL CULTURE
ILLUSTRATED COVERS OF *ON THE ORIGIN OF SPECIES*

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text that operates as a single unit. When the text and picture do not function in harmony– when something else intervenes between them – the result is an image/text. These interactions between words and images (imagetext vs. image/text) not only help to analyze representations, but trace their relationships to issues of power, value, and human interests. Herein I present and discuss recurring motifs among the illustrated covers of the various editions of *Origin of Species*, for example: motifs related to the Beagle's voyage; living nature; a focus on the author – Charles Darwin – rather than on his ideas; ascent of man (appears only on commercial editions); and unique metaphors.

Keywords: evolution, icon, imagetext, myth, natural selection, progress

1. Introduction

"Don't judge a book by its cover", so the saying goes, unless there are several hundreds of editions and translations of said book, each having a different binding and illustrations. This is the case for Charles Darwin's *On the Origin of Species by Means of Natural Selection, Or The Preservation of the Favoured Races in the Struggle for Life* (hereinafter: "Origin of Species" or "Origin"). The importance of the book cannot be overstated, both in terms of (the history of) evolutionary biology and culturally. The multitude of the illustrated covers can be interpreted as part of the "Darwin Enterprise", a term coined by Kjærgaard (2010).

While moving from the dense academic "Darwin Industry" to "Darwin Enterprise", Darwin was transferred to the public domain. In the course of this transition, Kjærgaard believed, historians lost their privileged position in society "as the authorized storytellers" (ibid. 117). Darwin was appropriated by many and for many various and sometimes conflicting needs, which raises the question regarding the ease of the appropriation and "the use people have made and still make of Darwin" (ibid. 118). I propose answering these questions and examining the transfer of Darwin to the public domain by looking at the motifs that appear on the many covers of *Origin of Species*.

My decision to focus on illustrations that appear on book covers, as opposed to other types of representations, is tied to the fact that the book under discussion here is *Origin*. No other biologist whose copyright has run out has ever had a book published in so many editions and so many languages, resulting in such a large body of cover designs. Moreover, covers have another advantage: they reach places that the text and the internal (scientific) illustrations may not reach. Anyone interested in *On the Origin of Species*, even if they do not ultimately purchase the book, or if they purchase it and never read it, is exposed to a wide variety of covers (especially if they are making use of the internet), many of which are illustrated. The abundance of illustrated covers of *Origin* provides virtually controlled conditions for a study of the unique way in which concepts transfer to the public.

Such an investigation must begin by examining the link between text and cover image. Accordingly, my aim is to map and classify the *Origin* motifs that appear on the covers of the various editions, and how they are brought to bear, toward determining which are being transferred

to the wider culture. Where there is an absence of salient Darwinian motifs, I sought to explain this absence.

2. On the *Origin of Species* and the circumstances of its writing

First, however, certain facts about the book must be clarified. Published in 1859, it presented Darwin's theory of evolution, which integrates two major ideas. Darwin was not the first to write about evolution, but even if the general idea of evolution was not entirely new, Darwin's theory had very innovative elements. His first and very innovative idea is the notion of the *tree of life*,[1] whereby all life forms on earth have a common origin or a small number of origins, as can be seen in the only illustration that appears in the book (Fig. 1). This powerful image depicts a single branched tree wherein every two biological species share a common ancestor. Hence, human beings are related not only to chimpanzees, but also to wolves, storks, and even bacteria. The theory of evolution derives directly from there: if humans and chimpanzees share a common ancestor, then some process must have occurred whereby one branch of this ancestor's descendants became chimpanzees, while another became human beings. This process is evolution.

Nonetheless, Darwin's theory does not rest solely on the principle of evolution. He also proposed a process to explain how it occurs. This process, known as *natural selection*, is the second major element in Darwin's theory. The logic of the process of natural selection as presented in *The Origin* is often depicted as a series of inferences drawn from premises and observations. The first premise is that while organisms have a large number of descendants, the size of their population remains steady.[2] Another premise is that environmental resources are limited. The inference drawn from there is that the descendants compete for resources, that is, they "struggle for existence", and only some survive. A further

1 Darwin employed the term "tree of life" at the end of Chapter 4, where he discusses natural selection.

2 In Chapter 3, "Struggle for Existence", Darwin actually calculated that one pair of elephants, whom he describes as the species producing the smallest number of descendants in the course of a single lifetime, will produce nearly ten million descendants after 740-750 years. These figures appear in the 6th edition of *Origin*; the 1st edition contains a flawed calculation.

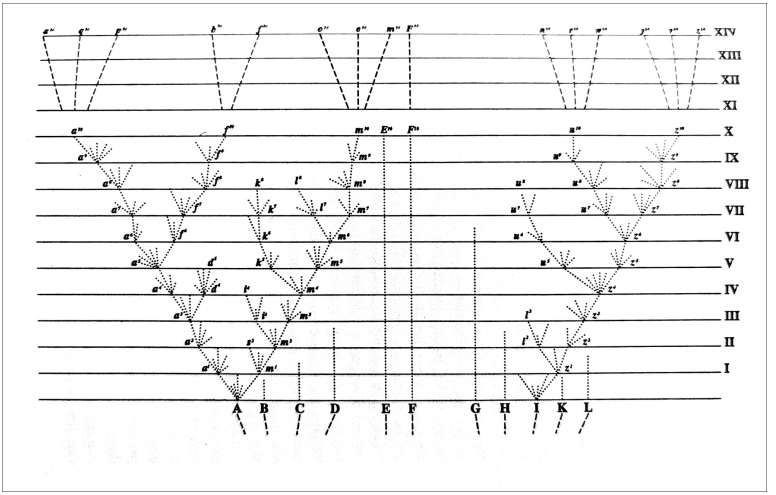

Fig. 1: Charles Darwin, "The Tree of Life", sketch from his notebook, 1837

premise relates to the existence of *variation* in the traits of the individuals in a given population. From this it is inferred that only those individuals that have the best "adaptations" (traits) survive to reproduce. The final inference is that the unequal ability of individuals to survive and reproduce leads to gradual change in a population, with favorable changes accumulating over generations.

In developing the concept of this process, Darwin made careful observations and did prodigious reading. While his observations during his five-year expedition as naturalist on the survey ship *HMS Beagle*,[3] convinced him that evolution existed, he still had no idea how it worked. The most famous evidence that observations alone were not sufficient to produce a theory can be found in his "Field Notes on the Galapagos",[4] where Darwin was negligent in his bird observations, not recording on which island each bird was observed, but indicating only the Galapagos Archipelago in general. He was not even aware that all of the birds that he collected were finches.

3 December 27, 1831 to October 2, 1836.

4 http://darwin-online.org.uk/BeagleLibrary/Beagle_Library_Introduction.htm (accessed 15.7.2023) The voyage of the *Beagle* brought the survey ship *HMS Beagle*, under captain Robert FitzRoy, to the Galápagos in September 1835.

Frank J. Sulloway (2009) suggested that Darwin was a creationist[5] at the start of his intellectual career, citing both the huge impression made on him by William Paley's *Natural Theology* (1802) and the creationism theory that guided his work in the Galapagos. For example, during his visit to Charles Island (one of the Galapagos islands), Darwin wrote in his journal: "It will be very interesting to find from future comparison to what district or 'centre of creation' the organized being of this archipelago must be attached". Sulloway explained this quotation as an attempt by Darwin to fit the odd creatures that he found on the remote archipelago into the prevailing creationist paradigm (175). According to intelligent design of Darwin's time, various "centres of creation" accounted for the distinctions between the flora and fauna in differing regions, such as on different continents. Sulloway added that Darwin's phrasing is an indication that he was wondering how a region so small could be a "center of creation". Today, as a result of the work of Darwin and his followers, the Galapagos Archipelago is regarded as a living laboratory of evolution in action due to its relatively young geological age and its isolation (which will persist only as long as human beings do not interfere and make the effort not to leave their marks on nature).

On his return from the voyage, at the end of 1836, Darwin began reading extensively. The topics that he explored were not limited to the sciences, but ranged as far as philosophy and social economics. In a journal entry two years later, he noted that he had begun reading Thomas Malthus, who is mentioned in *The Origin*. Malthus contended that if human beings did not limit their procreation, eventually there would not be enough food for everyone, condemning the human race to an unending struggle for survival. Although some human beings would survive, many more would not, as hunger, disease, and war would impede and curb reproduction. Influenced by these theories, Darwin took a similar view of animals and plants. All living creatures, he claimed, reproduce faster than do their resources, forcing them into a struggle for survival.[6] Darwin realized that the variations that he observed in wildlife populations result in some

5 Creationist of the old intelligent design school (with the teleological argument at its base).
6 Even during his lifetime, Darwin drew criticism for the aspect of the struggle for survival that he attributed to overcrowding in the animal population. Russian naturalists such as Kropotkin, for example, argued that there were open spaces populated by only a few individuals. See D. P. Todes, "Darwin's Malthusian Metaphor and Russian Evolutionary Thought, 1859-1917", *Isis* 78 (4), pp. 537-551.

individuals being better equipped and more capable of thriving and reproducing than others living under the same conditions. The former would have more offspring than the latter, so that over the generations, their traits would become dominant in the population. Darwin believed that new species were thusly created. Indeed, this is the nucleus of his theory of evolution by natural selection.[7]

Darwin did not publish *On the Origin of the Species* until 1859. He spent the intervening twenty three years developing a solid foundation for the theory that he proposed in his book, and collecting observations and experimental findings to support it.[8] It was important to him that his provocative propositions be backed up by as much solid evidence as possible. If not for the paper sent him by Alfred Russel Wallace,[9] he might have devoted some more years to his writing and search for evidentiary support. He felt that he was compelled to publish the book when he did, and indeed continued to add to and revise it for each of the next five editions. The result was one long impressive argument, together with a tension of opposites (which in literary terms can be said to create drama), which relates to the picture of nature that emerges from it: on the one hand, it conveys optimism and joyful appreciation of nature's wonderful wealth, while on the other it evokes pessimism and somber acknowledgement of nature's cruelty and wastefulness. As a result of this duality, quoting selectively from Darwin makes it possible to present him in one of two manners, each of which is inaccurate (Midgley 2002, 5). The fact is that in some cases the duality can be found in a single paragraph, such as the well-known "entangled bank" passage with which the 6th edition concludes.

7 This is merely a schematic description of Darwin's theory, over which he labored for 20 years, primarily to be able to answer any questions that might be posed to him. Among other things, he expanded on the process for generating species through the element of geographical isolation.

8 During this period, Darwin published several books (and papers), mainly the findings from his journey on the *Beagle*, and these made him quite well-known in England, and not only among naturalists. Hence when the first (small) edition of *Origin of Species* was published, it sold out in one day. https://www.amnh.org/research/darwin-manuscripts/published-books (accessed 7.21.2023).

9 An English naturalist, Alfred Russel Wallace, proposed a theory of natural selection independently of Darwin. For a complete edition of the writings of Wallace, see http://wallace-online.org/ (accessed 7.21.2023).

3. How to make a visual depiction of natural selection?

Darwin published over twenty other books in addition to *Origin*,[10] all of which were accompanied by illustrations,[11] save for *Origin*, which contains only one diagram: the evolutionary tree of life. The reason for that is not known. I mentioned above that Darwin was motivated to publish *Origin of Species* earlier than he intended, due to an article published by Russell Wallace that addressed the diversity of species using the same innovative idea of natural selection, which was also proposed by Darwin. It may be assumed that Darwin was in a race to keep ahead of Wallace regarding the development of the subject, and therefore likely did not have time to order pictures from the illustrators with whom he worked, such as the couple Elizabeth and John Gould.

Jonathan Smith (2009, 9-10) suggested that the lack of illustrations in *Origin* was due to the obvious difficulty of creating a visual depiction of natural selection. How, Smith wondered, might Darwin have illustrated the inordinately slow process that operates through tiny variations to produce adaptation?[12] Smith answered his own question, at least in part, when he explained that the conventions of scientific illustrations at the time were not conducive to Darwin's evolutionary view. And yet the lack of a suitable convention and the existence of an essentially unillustratable concept of "species" are not enough to account for the absence of illustrations in *Origin*. After all, zoological illustrations could have appeared in the appropriate places, as they do in Darwin's other books, including *The Descent of Man and Selection in Relation to Sex*, which might be considered a sequel to *The Origin*. Twentieth and twenty-first century conventions of scientific illustrations, however, are not similarly inconducive to the theory of evolution. Consequently, a visual image of natural selection now depends entirely on the creative skills of the illustrator.

Two other points should also be taken into account: Firstly, when designing a cover, illustrators have more freedom than do authors; they can opt

10 http://darwin-online.org.uk/contents.html (accessed July 5, 2023).
11 See for example: Overview of illustrations and maps in Darwin's *Geology of The Voyage of The* Beagle http://darwin-online.org.uk/graphics/Geology_Illustrations.html (accessed July 11, 2023).
12 While evolution does not have to be slow and gradual – mutations in homeotic genes, for example, accelerate its rate – Darwin didn't know in his time either about genes or genetic mutations.

for a metaphoric, symbolic, or artistic representation of natural selection if they so choose. Secondly, the cover of *Origin* need not necessarily display a depiction of natural selection in order to maintain the ethos of cover designs, that is, to convey the contents of the book to the potential buyer. As aforementioned, there are numerous other motifs in the book from which the illustrator can choose.

4. The intertwining of text and pictures

W.J.T. Mitchell devoted his 1994 book *Picture Theory* to an examination of the connection between text and pictures, arguing that this connection was constitutive of representation, a claim that derived from his famous contention that "all media are mixed media, and all representations are heterogeneous" (5). Mitchell sought not merely to describe the interactions between visual and verbal representations, "but to trace their linkages to issues of power, value, and human interest" (5). He maintained, for example, that the priority given to text over pictures has ancient roots in Judeo-Christian culture and the story of Moses and the Golden Calf (2), although later in the book he addressed more recent iconophobias (that of Rorty, Wittgenstein, and the Frankfurt School).

To examine the cover designs of Darwin's *On the Origin of Species* I draw on a concept that Mitchell first introduced in *Picture Theory*, the "imagetext", defined as a composite of picture and text that operates as a single unit in representation. In contrast, when the text and picture do not function in harmony – when something else intervenes between them – the result is an "image/text". A third possibility is "image–text", consisting of a weak link between the image and the text and their distinctions. Mitchell's concept of "imagetext" appears apt for a discussion of book cover design, a well-established field that has drawn over time on various schools of art. The very ethos of cover design is that the cover is the reader's first contact with a book, and that the book's content is the inspiration for the cover designer.[13] Thus, at least on the face of it, all book covers

13 The words of David Pearson, the house designer at Penguin Books, reflect the perception of many cover designers. Pearson was interviewed in 2004 after the publication of Penguin's Great Ideas series, which Pearson oversaw and for which he designed some of the covers. Asked to comment on the series' covers, which shared a common theme, he made the following remarks: "It seemed obvious to go straight to the text for inspiration and let the flavor of the writing directly influence the look of the cover". In response, the

should be examples of imagetext. But even before examining specific cases, we can readily imagine considerations that are liable to interfere with the harmony of imagetext and cause the first cracks to appear between the two elements: These might include financial considerations, and thus there are covers of the *Origin* without any design except for a few important details such as the title, the author, and the publisher. Another example is illustrated covers as part of a series with a certain theme, where the common theme sets the tone and prevails over the choice of the cover design.[14]

5. The methods and selection of the book covers

The current qualitative study examined several hundred illustrated covers of *On the Origin of Species*, from two small private collections[15] and from the website LibraryThing.[16] Also, by a search engine such as Google Chrome using the image feature and search terms that include the name of the requested book, namely "Origin of Species", and "illustrated covers", a variety of results were obtained. Following the scanning of the illustrated covers of *The Origin of Species*, I established a computer database divided according to motifs that often appeared in the illustrations and to which I will refer later. It is easy to see that some of the covers appear more than once in the LibraryThing display and that individual covers appear even more than twice. Therefore, as well as based on the database I created, I estimate the number of covers of *The Origin of Species* that have been illustrated over the years at about half of the number that appear on LibraryThing.
All of the covers appear on print editions of the book; that is, electronic books were excluded from the analysis in order to somewhat limit the

interviewer noted, "The designs bring the insides of the book, the unashamedly decorative or ornate nature of a title page, to the outside". Steve Hare, https://www.eyemagazine.com/opinion/article/type-only-penguins-sell-a-million-shock-extract (accessed 26 July 2023).
14 See the series of books it is about in the attached link, and especially see the cover of *The Origin of Species* that appears second from the left in the last row: http://www.jimstoddart.co.uk/art-direction/series/0zbdo1gv7hnz0xb5948p1yacmx32qk (accessed 6 September 2023).
15 Many thanks to Dr. David Mallow for making available to me the cover illustrations of the *Origin of Species* volumes in his collection.
16 http://www.librarything.com/work/23533/covers (accessed 28 Jun. 2023; at that time the site contained 1,097 illustrated covers of the book, including 555 uploaded by private individuals and 542 uploaded from Amazon's website (in an approximate 1:1 ratio).

size of the sample that the study addresses. Whenever I could not actually see a hard copy of the book, I checked for it on several websites, most particularly that of the publisher, before including it in the sample. Editions in all languages were considered, although in retrospect the large majority turned out to be in English and Spanish. While the sample numbers around five hundred illustrated covers, the number of editions that have appeared since the original publication of the book, irrespective of the nature of the cover, is larger.

6. Visual and semantic types of the book covers

Several themes appear on the covers of *The Origin of Species*. First I will list them, and then expand on several examples: 1. Nature, in the sense of animal and plant paintings, is celebrated on many of the covers and will be divided into sub-themes: A – motifs related to the *Beagle* voyage: iguanas alone or on one of the Galapagos Islands, turtles alone or on one of the Galapagos Islands, Darwin's finches and exotic birds from the Southern Hemisphere; B – Entangled bank (see above); C – monkeys. 2. A focus on Darwin, the author, rather than on his ideas. 3. Metaphors. 4. Other, for instance, "ascent of man". 5. Color designs without any motif.

1. As an example for the first theme, I will expand on the first subtheme 1A. Beagle voyage and living nature:

While as could be expected, the animal world is celebrated in numerous cover designs for *Origin*, various creatures are the honorees in these festivities. Although many covers feature organisms of some sort, one in particular stands out: the finch. According to Kjaergaard, many myths are associated with Darwin, one of which is "Eureka Darwin", according to which Darwin "went to the Galápagos Island, took a good look at the finches and discovered evolution in a flash" (Kjaergaard, 110). The finch is a popular motif for the cover of Darwin's book, appearing either on its own or as one of the 13 bird species identified by ornithologist and artist John Gould for the London Zoological Society, which received them from *HMS Beagle*. Finches are the sole motif on several covers, and are featured on other covers along with a large number of other Darwinian motifs. So: Are finches illustrated on a book cover of the *Origin* create an imagetext? Or image/text?

There is no doubt that finches are part of a dramatic story, a tale of the "context of discovery",[17] about a discovery that very nearly did not happen, and about a great drama in the annals of science, as John Gould, who recognized that the birds that Darwin brought back with him from the Galapagos Islands were all differing species of finches (versus same genus and not different genii, as Darwin believed), was, ironically, a creationist. In addition to producing illustrations for various other writers, Gould painted and edited albums of birds aimed at extolling the act of Creation (Smith 2006, 92-136).

The external differences of the various finch species, and particularly the striking differences in their beaks, conveys the message of variation, adaptation, and evolution even to someone who knows little or nothing of evolution. But finches are not mentioned in the *Origin of Species*,[18] Darwin did cite them elsewhere, and speculated on the continuous variation of their beaks in the two editions of the *Journal of Researches* that he published in 1839 and 1845. These editions were accompanied by illustrations by Elizabeth Gould and included illustrations of finches. In the 1845 edition, a new illustration appeared: the famous image of four numbered heads of finches, illustrating the variation and gradation in the size of their beaks, an image with which Darwin was assisted by another (Voss 2007/2010, 50-60).

Voss (p. 20) claimed that this illustration was the first visualization of the theory of evolution presented to the public, and since then it has appeared in countless textbooks as an example of the splitting of species, as well as on stamps and t-shirts, and we might add, also on covers of *The Origin of Species* (Fig. 2). Moreover, "the power of the 1845 illustration exemplifies how images can formulate and convey scientific theories, and it offers a lesson in how pictures were used to communicate knowledge in the nineteenth century".[19]

The finches of Galapagos became a famous piece of evidence use to support Darwin's theory in the first half of the 20th century following David

17 "The distinction between "context of discovery" and "context of justification" dominated and shaped the discourse on discovery in 20th-century philosophy of science". Scientific Discovery (Stanford Encyclopedia of Philosophy) (accessed 26 July 2023).

18 To be precise, while the word "finches" appears in the first edition of the *Origin of Species* three times, and in the sixth and last edition twice, all of these mentions are anecdotal, and it was equally possible to mention other species of birds. Darwin did not mention details about their diversification suitable to their lifestyle and how they feed.

19 Voss 2007/2010 p. 20.

Lack's ten-year study of these finches, and a book he published in 1947 called *Darwin's Finches*. In the second half of the 20th century, the couple Peter and Rosemary Grant devoted twenty years to observing finches on the isolated Galapagos island Daphne Major, managing to demonstrate evolution in action. Jonathan Weiner made their findings available to the public in the 1994 Pulitzer Prize-winning book *The Beak of the Finch: A Story of Evolution in Our Time*. Variation in beak shape and size between finch species on different Galapagos islands has subsequently become one of the textbook examples of evolution. Voss (2007/2010, 50-60) described the metamorphosis of Darwin's finches from small, uninteresting birds to a scientific icon, a process that could not have taken place without "taxidermists, artists, and illustrators".

After presenting a condensed history of "Darwin and the finches" and the place of the latter in the history of evolution, it is time to return to the question whether the cover of *Origin of Species* with an illustration of one or more finches is a case of imagetext – i.e., of text and image working together as one unit without anything intervening and interfering – or is it a case of an image/text? The aforementioned historical description shows the intellectual efforts made over time to establish a mature example of evolution starting from Darwin himself to our times.[20] Considering that the center of this revolutionary book is the process leading to evolution, there is nothing like an example of evolution from nature to illustrate the cover, even more so if it is an example whose history is related to the author. It is easy to see that this is a case of an imagetext despite the myth mentioned. But these illustrations do not disprove the myth but might strengthen it among its believers – for them it is also an imagetext.

2. A focus on Darwin the author versus his ideas

The most common motif on *Origin of Species*' covers seems to be Darwin's portrait. In addition to the prominent and solo place given to him on the covers, his portrait appears on other covers together with other evolutionary motifs. The use of the author's face on the cover of his book is not unique to Darwin; it is common in the case of iconic figures or when there is an interest in turning the writer into such a figure.

20 Example of adaptive radiation. "An adaptive radiation occurs when a single or small group of ancestral species rapidly diversifies into a large number of descendent species that occupy a wide variety of ecological niches (Herron and Freeman 2015 p. 740)". Darwin, of course, did not use this use this terminology.

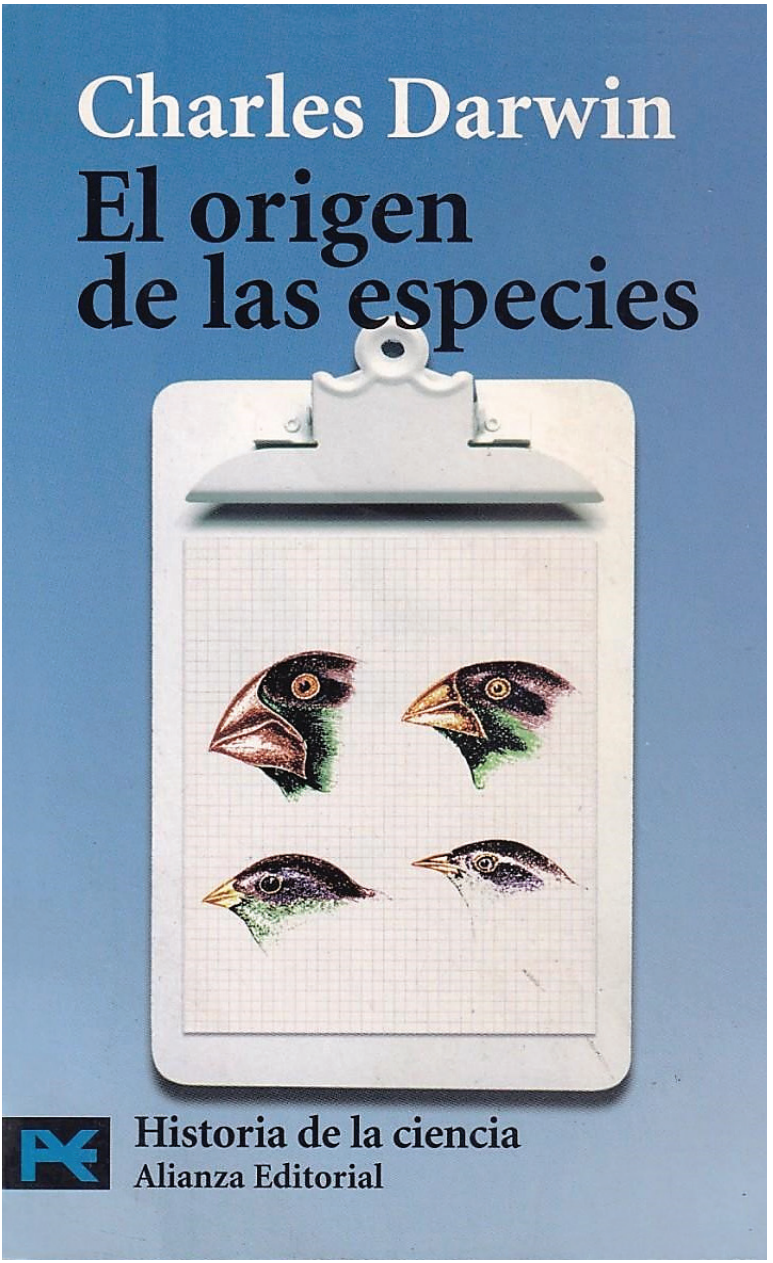

Fig. 2: “Darwin’s finches” – Alianza Editorial “Origin of Species” 2003

3. Metaphors

A representative example of this category that also exhibits artistic excellence is the cover designed for the edition published by Washington Square Press in the early 1960s (Fig. 3). Here, working in the spirit of modernism, the designer managed to capture the Darwinian theory by means of a powerful and innovative minimalist metaphor. At first glance, we appear to be looking at the stalks of a green plant. Yet on closer inspection, we find that the plant also resembles a breaking wave or flames in a state of motion and flux, thus creating a visual image of the concept of evolution. Moreover, the flames or stalks all differ, so that no two are identical, and as we have seen, variation is a central principle of Darwin's theory. In addition, the "stalks" are arranged in a bell curve: The one in the middle is flourishing and growing toward the sky, while those next to it are beginning to droop, and those at the ends are practically wilted, an allusion to the notion of the survival of the fittest, most adaptive, variation.[21]
Book jackets were introduced in 1820 as a purely practical item. However, toward the end of the nineteenth century, they were transformed into a visual and conceptual means of communication when publishers began to realize that they could be used to attract potential customers if they bore a design, especially one in color.[22] Covers thus gradually became the object of growing interest in the field of design. In the early 20th century, the design began to be printed both on the jacket and on the binding itself, whether hard cover or paperback. This long history of cover design, beginning in 1820 and continuing to the present day, stands behind the Washington Square Press sophisticated cover (as well as other illustrated covers) and renders it imagetext.
An example of an early illustrated cover is a fascinating cover of a Dutch translation of *On the Origin of Species* from around 1900. This book is one of a series: *Darwins biologische meesterwerken – Darwin's biological masterpieces*, all of the volumes of which bore the same metaphoric image.[23]

21 I would like to thank Prof. Shimona Ginsburg (Open University of Israel) for her insights regarding this cover, including the fact that the stalks differ in the extent to which they are thriving.
22 Book jackets (also called dust jackets to reflect their function) are made of paper and placed over the book's hard cover. They can still be seen today, mainly on costly books or titles published by prestigious presses.
23 https://www.flickr.com/photos/57440551@N03/48815052083; http://darwin-online.org.uk/converted/pdf/1889_OriginDutch_F650.pdf (accessed September 13, 2023).

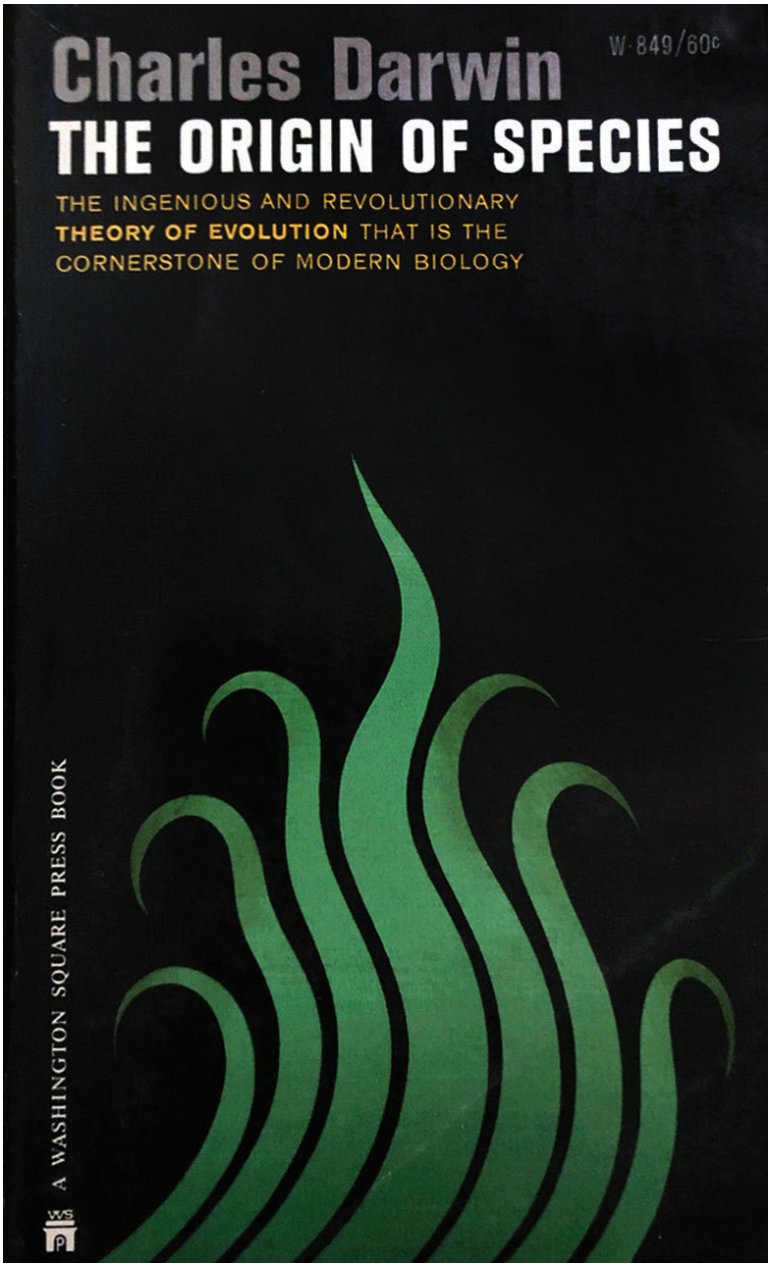

Fig. 3: An example of a metaphorical motif – Washington Square Press, early 1960s.

The representation includes a framed image of a partially covered woman, placed in nature, which includes plants and animals. We do not expect to find a picture of such large dimensions in the context wherein it is placed. Perhaps the illustrator is alluding to the meaning of Darwin's work for us, that is, removing humans from the status that the Holy Scriptures gave us as the "crown of creation" and placing us in our natural place together with all other animals.
This metaphorical type of image requires visual literacy in the viewer; moreover, the dialectic between the image and the text can lead to more than one interpretation. Therefore, some of the interpretations may place the representation in the image-text situation.

4. "Ascent of Man" or "March of Progress"

"Ascent of man" or "March of Progress" is probably the icon most identified with the concept "evolution" and definitely the most parodied. While it appears on a considerable number of *Origin of Species* covers, none of these are published by university presses.[24] The origin of this image is the artist Rudolph Zallinger, who drew it in 1965 for the *Early Man* volume of the Life Nature Library.[25] I will show that "March of Progress" appearing on the cover of *Origin of Species* constitutes an image/text.
The Gramercy Random House edition of *Origin of Species* (1979) features "Ascent of Man" all over its cover (Fig. 4), while other editions are satisfied with a more modest version of it. (The motif appears on other covers, often together with Darwin's portrait or some other motif.) March of Progress depicts a line of five or six primates, beginning with a monkey, continuing with an ape, and ending with a human, and which appears to form a segment of the great chain of being. The concept of a linearly ordered universe, or *Scala Naturae* ("great chain of being"), is very old in Western thought. Aristotle believed that all living beings could be ranked according to their degree of perfection on this metaphorical hierarchy. At the top of the scale he placed humans, and the other organisms that were known in his time are arranged in descending order according to their distance from perfection, animals first and then plants. At the bottom of the ladder were the minerals. In the Middle Ages, the hierarchy was believed to be God-given, and angels and God were placed above humans.

24 It will become clear later.
25 https://sites.wustl.edu/prosper/tag/zallinger/ (accessed September 9 2023)

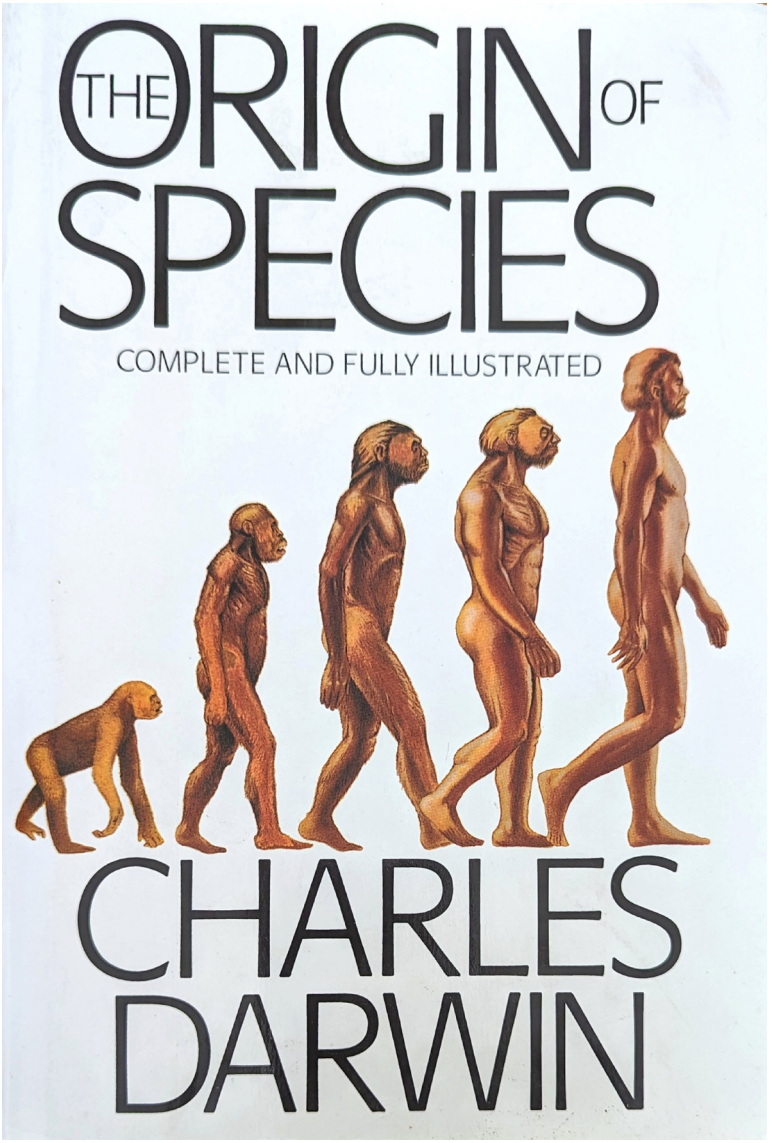

Fig. 4: "March of Progress" – Gramercy Random House, NY, 1979. Desginer: D.L. Cramer Ph.D.

The image expresses the statement "Humans are descended from the apes", which contains two errors. Firstly, it suggests that humans are descended directly from the great apes, though this is not the case. While humans and hominids are descended from a common ancestor, they evolved in differing directions. The second mistake is the notion of progress, or more specifically, of the ascent of humans, according to which individuals necessarily become more complex and sophisticated. While much has been written on the subject of evolutionary progress, including many disputes, a number of things are quite clear: Darwin's natural selection is opportunistic and makes use of the variability available at a particular time and in a particular locale. Fitness for existing conditions does not guarantee long-term survival, particularly when conditions change catastrophically. In some cases, adaptation by natural selection does lead to greater complexity, which is the result of luck of planning and purpose. Evolution cannot be conflated with progress, for the criteria for success in nature are survival, reproductive success, and diversity. Although homo sapiens may be a common species, the class is not diverse. Furthermore, complexity (anatomical, physiological, or morphological) is not in itself directly related to evolutionary progress, i.e., if a similar evolutionary solution can be achieved simply and elegantly, then this is preferable, as the chance of disruptions decreases.
Paleontologist and author Stephen J. Gould explained in his award-winning 1989 book *Wonderful Life: The Burgess Shale and the Nature of History* why evolution is presented as a ladder of progress: Evolutionary biologists choose, as representative cases, precisely unsuccessful lineages, i.e., lineages from whose evolutionary bush only one thin branch remains (because the lineage is close to disappearing), e.g., horses and humans. This ironic choice occurs, in Gould's opinion, "because we try to extract a single line of advance from the true topology of copious branching. In this misguided effort, we are inevitably drawn to bushes so near the brink of total annihilation that they retain only one surviving twig. We then view this twig as the acme of upward achievement, rather than the probable last gasp of a richer ancestry" (35).
The need of humans to find regularities in nature and the universe is touching and understandable, owing to the sense of confidence that these give us facing the unknown, and thus, with the addition of curiosity, the magnificent scientific enterprise began. But it has been clear for a long time that linear regularities are not found in multi-interre-

lated living nature. I have shown the long history of the "March of Progress" that is not relevant to biological evolution, and hence when this icon is featured on the cover of *Origin of Species* an image/text is created. What motifs are rare to find on the covers of *Origin of Species*? As mentioned before, book covers reflect the contents of a book or transform the contents into a visual message. Considering this and the fact that there are around five hundred different illustrated covers for editions of *On the Origin of the Species*, I would have expected to find additional motifs expressed eventually.

A. The expression "struggle for existence" appears quite frequently in Darwin's *On the Origin of the Species*, and together with "competition", is part of the natural selection process described in the book. This theme is not echoed on the covers, appearing on only two covers among the five hundred: one on the Penguin edition (Fig. 5), and the other on the Bantam Classics edition. Both are cases of imagetext yet the preference appears to be depictions of nature's beauty as expressed in some sections of the book, particularly in view of the fact that Darwin was a naturalist and a genuine nature researcher.

The message on the Penguin edition cover (1988) features an 1830 painting titled *Duria Antiquior* by Henry De la Beche, a geologist and amateur illustrator. The back cover "clarifies" that the illustration depicts "extinct animals obeying the 'law of nature which bids all to eat or to be eaten in their turn' without any reference to what appears to be a quote". De la Beche painted *Duria Antiquior* with the idea of having it printed as a lithograph so that the income from sales would go to support fossil collector Mary Anning (1799-1847).[26] The cover of Bantam edition (1999) features Tapestry from the New World: Combat of the Animals (Gobelin Manufacture, 18th century, Conde Museum, Chantilly, France), which depicts preying and predatory animals in a beautiful landscape.[27] Although the

26 Henry De la Beche's painting is the very first reconstruction of ancient life and hence its importance, writes the geologist and historian Martin J. S. Rudwick. He thinks that "the tone of the picture is more Neoclassical than Romantic" so it is not "a Darwinian scene of 'Nature red in tooth and claw'" (42-48). The echo of the artistic debate, mentioned here, does not change the fact that for Penguin Publishing and the majority of viewers it is a representation of animals from an ancient time that prey on each other.

27 https://artsandculture.google.com/asset/the-gobelins-tapestries-gobelins-manufactory/MQFADfDXsHiJ8Q?ms=%7B%22x%22%3A0.5%2C%22y%22%3A0.5%2C%22z%22%3A9.118374118385866%2C%22size%22%3A%7B%22width%22%3A2.3374555696305226%2C%22height%22%3A1.2374999999999992 (accessed Sept, 18, 2023).

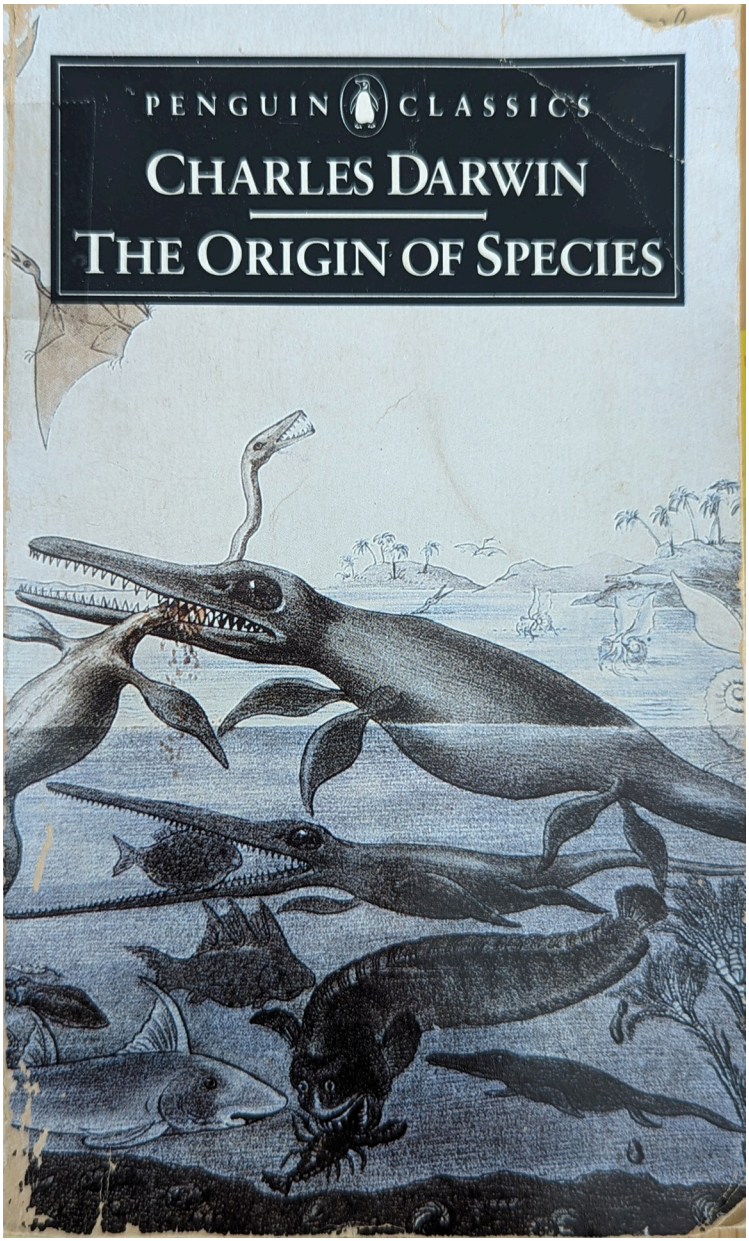

Fig 5: One of the two covers on which the "struggle for existence" motif appears – Penguin edition 1988

tapestry is in color, the image on the cover appears in black and white. The concept of "struggle for existence" has a long history. As already mentioned, Darwin read Thomas Robert Malthus' (1798) *An Essay on the Principle of Population,* wherein Malthus argued that a population will increase exponentially if unchecked, while resources will only increase arithmetically. From it, Darwin drew the idea of the mechanism for natural selection that he sought. Wallace, who shared with Darwin the idea of evolution, also used the term "struggle for existence" in his paper. The only remaining question is: Why does this imagetext not appear on more covers?

B. The tree of life is depicted on only two covers of Darwin's book, even though it is one of Darwin's major ideas (see above) and the subject of the only illustration in *On the Origin of the Species*. Darwin stated the following in the final paragraph of Chapter 4:

> The affinities of all the beings of the same class have sometimes been represented by a great tree. I believe this simile largely speaks the truth. The green and budding twigs may represent existing species; and those produced during each former year may represent the long succession of extinct species. At each period of growth all the growing twigs have tried to branch out on all sides, and to overtop and kill the surrounding twigs and branches, in the same manner as species and groups of species have tried to overmaster other species in the great battle for life..... As buds give rise by growth to fresh buds, and these, if vigorous, branch out and overtop on all sides many a feebler branch, so by generation I believe it has been with the great Tree of Life, which fills with its dead and broken branches the crust of the earth, and covers the surface with its ever branching and beautiful ramifications.[28]

28 Darwin, C. R. 1859. *On the origin of species by means of natural selection, or the preservation of favoured races in the struggle for life*. London: John Murray. 1st edition, 1st issue, pp. 129-130. http://darwin-online.org.uk/content/frameset?viewtype=text&itemID=F373&pageseq=1 (Accessed on December 10, 2023).

Why does the tree of life, which today is usually called a phylogenetic tree, not appear on other covers of *On the Origin of the Species*? Could it be that the tree of life metaphor is seen as having religious overtones?

7. Conflicting explanations

The central theory of the discipline – the theory of evolution – provides a materialistic naturalistic explanation for the formation of species, according to which species are created from previous species, starting from the earliest beginning. The explanation includes *our* species, i.e., homo sapiens. This explanation, as posited by Darwin and as it is updated, refers to an area that has been the monopoly of the Judeo-Christian tradition, according to which all creatures on earth, and humans at their head, are God's creation. Usually, explanations in different fields of science do not concern our place on earth or the way in which species, including the human race, were created. However, in the 19th century, explanations began to appear in the fields of natural history and biology[29] that touched on exactly these topics, including Darwin's naturalistic materialistic theory. The emergence of the theory of evolution led eventually to the creation of the discipline "evolutionary biology", but long before that to a head-on collision between religion and science that continues to this very day.

According to Haqq-Misra, the theory of evolution functions as a myth, because myths essentially address how a story is delivered to explain or justify natural phenomena,[30] the beginnings of a society, or various beliefs prevalent in society. Therefore, the theory of evolution addressing the question of the origin of diversity of life (including humans) tells a story about the order of events from the beginning of life, and thus establishes a myth similar to the myth of creation prevalent in the Judeo-Christian tradition. Haqq-Misra contended that the myth does not in any way indicate the truth, accuracy, or the possibility of the existence of a narrator of the myth itself, but rather only that it tells a story that explains a phenomenon or event. In his opinion, the religious and

29 The word biology in the modern sense was introduced as an independent concept for the first time at the beginning of the 19th century.

30 A similar claim appears at the center of Oren Harman's 2018 book, *Evolutions. Fifteen Myths That Explain Our World*.

evolutionary myth are in conflict due to how the story is told: While both myths convey a similar idea of the superiority of humans over nature, they present differing accounts of how things came to be. Hence many people and communities for whom the questions about the origin of life are essentially questions of faith, and for whom the religious creation myth is the usual explanation, are compelled to angrily reject the evolutionary creation myth, which competes with the religious myth. This represents a clash of worldviews.

Midgley points to the mythic power inherent in science in general and in the theory of evolution in particular, and its ability to draw people, who seek meaning for their lives, into the "religion" of evolution. The promise of this particular "secular faith" to believers is progress, even though progress is not part of (the logic of) evolutionary theory.

In light of the treatment of the theory of evolution as a myth and even as a (secular) religion and opposing the Creationists, it is possible to understand the multitude of Darwinian representations on the covers of *Origin*. This view of things also elucidates why two representations that constitute imagetext – struggle for existence and the tree of life, which address prominent motifs in Darwinian theory – are in the minority among the other depictions on the book's covers: a visualization of the struggle for existence is not necessarily the most appealing sight, and perhaps not desirable for display in the shop window of those who compete for their place in public. As mentioned earlier, the reason for avoiding the "tree of life" motif is its nearly universal association with the Book of Genesis. The "ascent of man" motif corresponds well with Midgley's words, due to its problematic message of progress, and indeed its appearances on the covers of commercial editions of *Origin of Species* are numerous and are an icon of evolution in other contexts as well. As explained, it is an image/text due to the mechanism of evolution's not necessarily leading to progress.

Metaphorical representations are a special and perhaps subversive group, as in some cases, the relationship between image and text is blurred due to the idiosyncrasies of the artist. For example, the representation created by Damien Hirst in the Darwin jubilee year 2009,[31] while

31 Hirst's cover can be seen here https://www.theguardian.com/science/blog/2009/jan/26/evolution-charles-darwin and here https://www.ft.com/content/8747290e-1fe1-11de-a1df-00144feabdc0 (Both accessed on December 10, 2023).

idiosyncratic, attracted a lot of attention and thus did the job despite Hirst's obscurity. Whether consciously or not, the illustrated covers become representations of the theory of evolution in the public sphere. Along with natural history museums, popular science books on evolution, the annual Darwin Day on February 12th, which is celebrated with lectures open to the public given by scientists, and more, they become a way to create a community that seeks to differentiate itself from the one that clings to the religious myth of the creation of life on our planet.

8. Summary

An illustrated cover of a book is a rhetorical device that points out the ideas conveyed in the book. Designers and other figures in the book business believe that the greater the degree of communicativeness of the cover, the more successful the distribution of the book. *The Origin of Species* has appeared in many editions over the years, and the number of illustrated covers is correspondingly high: At least five hundred illustrated covers have been published in various countries, in various languages, and by various publishers, both academic and commercial. Researchers point to the theory of evolution's mythical aspect, and some believe that this theory serves as a secular religion. In light of this treatment of the theory of evolution and facing its opposition by Creationists, it is possible to understand the multitude of Darwinian representations in the public sphere. The representations examined using Mitchellian tools can be divided into two: Most of them are imagetext, and only one – "the accent of man" – is image/text. That is, while the representations presented to the audience are harmonious in their structure, surprisingly – or seemingly so – one of the most popular representations features the image/text structure.

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