

Evolutionary Type:
A journey through the history of typography

Integrative Project 2013



Erica Neumann

One hundred and fifty four years ago, Charles Darwin published a book that forever changed the way scientists study biological evolution: *The Origin of Species*. A result of years of research, *The Origin of Species* is the product of Darwin's theory of evolution, based primarily on trait heredity and variation among individuals. It argues that populations of organisms evolve over time, gradually diverging from previous species based on adaptations and mutations of hereditary traits. Heredity perpetuates the passing of genes from one generation to another, theoretically passing on genes whose expression results in traits that better suit an organism to survive. Darwin calls this process natural selection and defines it as the "struggle for existence," or the competition for survival. He uses this process to explain the relationship between species. While natural selection plays an influential role in structuring organisms' biologies, is not the only mechanism at work in Darwin's theory of evolution; mating structure, speciation, and mutations are also factors that influence and drive biological evolution. It is these mechanisms that also drive my integrative project.

Biological evolution is a scientific puzzle yet unsolved and while pieces are constantly discovered, the picture in its entirety is far from complete. In such a sense, the ever-changing, ever-evolving, complex design of life is truly nature's art. But are living organisms the only thing to have evolved over the history of time? An argument can be made that many things have evolved, such as language, technology, and typography. The art of typography is the intricate design of each letterform, individual structures, how they interact with one another, and how they communicate. The alphabet is full of dynamic elements that are constantly interacting and evolving to adapt to new manual, electronic, and

cultural applications. Typography has been at work since ancient times, changing over time as a means of expression and communication. Handwritten manuscripts and woodblock prints were once a labor of love, time consuming and painstakingly detail-oriented. With Gutenberg's invention of moveable type in the mid 1400's, the art blossomed with a new ease and diversity.

Biological evolution and typography are not as unrelated as they may seem. They are both the beautiful and intertwined expressions of art and science. Biological evolution, the constant, organic adaptations of organisms to survive and grow throughout Earth's diverse environments is a beautiful scientific process. It becomes art when posited into a theory that attempts to model the complex natural processes of such evolution. The research and mathematics involved in the design of typefaces, created for problem-solving, optimum readability and expression is the quintessence of scientific art. This project views typographic history through the lens of biological evolution to demonstrate the evolution of type. Comparative anatomy, natural selection, speciation, and mutation are applied to the typographic world in a way that breathes life into the letterform.

David Garneau notes in his essay, *Art, Science, and Aesthetic Ethics*, "a true art/science collaboration requires both systems to be affected and, hopefully, advanced" (28). This is not the purpose of the book *Evolutionary Type*. This project does not aim, or expect, to advance or affect either of the two fields, but rather to show through text and illustrations an alternative perspective for looking at a very structural form of art. It brings together two fields that are culturally governed by very different sets of rules. Science is based on observation and experimentation. It is required to adhere to objectivity and a common standard of both method and language. Art has a much looser definition, if one at all. It has

no system, boundaries, or single, standard method. Social constructs constrict science, while “art” runs freely through the grips of conceptual minds. With *Evolutionary Type*, boundaries collide and dissolve through the notion of evolutionary processes. And process is what this project is about.

While the final project sheds light on how, metaphorically, the process of biological evolution can be applied to typography in describing how type has changed over time, the development of this concept has been a personal process. The original framework of the project was historical, focused primarily on the metaphorical parallels of events between the histories of evolution and typography. These events were first expressed lyrically through poetry and visually through typographic designs that abstractly represent the flow and rate of biological evolution. Only through research and trial and error did the importance of *the process* of events, rather than events themselves, evolve.

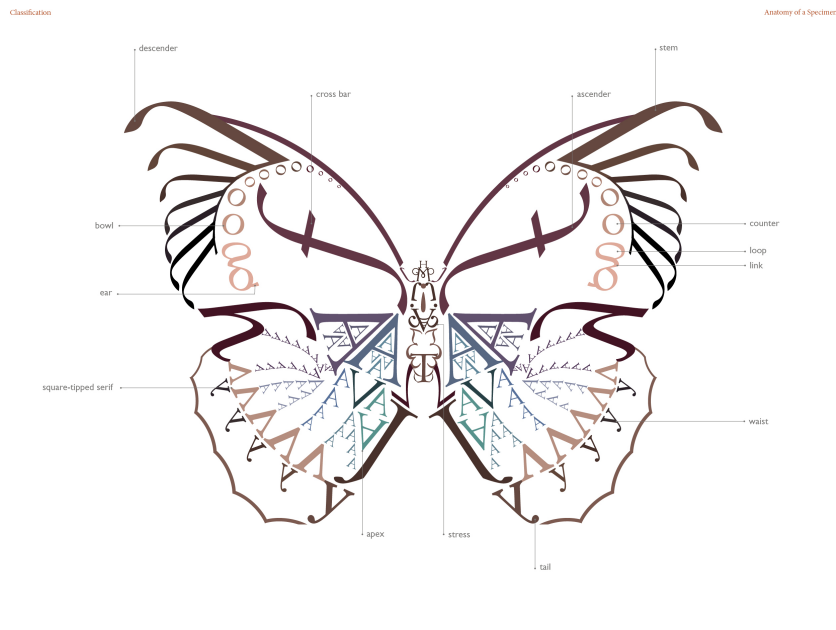
Like a plant potted in too small a pot, a project can not grow to its fullest potential if forced into arbitrary comparisons, but rather, it must develop from gradual, natural processes. And so, in conceptualizing *Evolutionary Type*, I conducted research on the history of typography and different typefaces and on biological evolution through reading books, articles, blogs, watching documentaries, and asking questions. Two of the most influential books I read during my research were *Why Evolution is True*, by Jerry Coyne, and *Just My Type*, by Simon Garfield. Jerry Coyne and sections from Darwin’s *Origin* contributed a deep understanding of the technicalities of how each of Darwin’s evolutionary mechanisms worked and influenced species diversification. With this, it was easy to begin the search for ways in which these mechanisms applied to typography, and how metaphors could relate type and natural history.

This research is presented in the form of an oversized, hand-bound book. The form—traditionally one of type’s natural environments, is inspired from scientific influences. The choice to hand bind the final product was a personal, deliberate decision to return to a time when the art of book making was a laborious, precise process. Today, type and books have become a digital medium created through software programs and mass publication companies. Books have become e-books and print is a rapidly dying medium. But the process of printing and binding each book individually, physically reminds me of the history and processes that form the content of my project.



The purpose of the project is to educate the audience about natural history and typography through a unique and enticing presentation of information. The book is divided into four sections, each representing one of Darwin’s mechanisms and examples of how the biological processes are also seen in typography. The content is told in two typographic voices: one tells the story of evolution, while the other tells the story of type. These voices are visually distinguished through grouping separation and different typefaces. This aids the reader in following the organization of information and keeps the audience engaged in the individual stories. The book is inspired by late 18th through early 20th century natural history

books, created at a time when naturalists began to categorize the world's natural curiosities. My book is illustrated with visuals constructed entirely of letterforms.



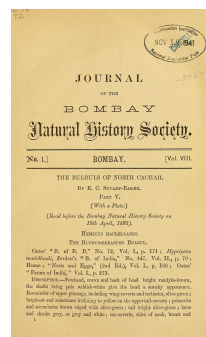
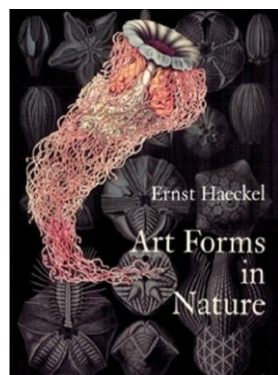
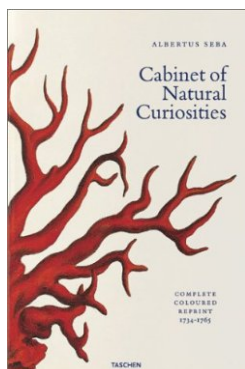
The inspiration for this project sprouts from a love of research. Wired to appreciate the discovery of natural science and the satisfaction of factual explanation, I feel a craving to ground the subjectivity of art through something concrete. This is the root of my design practice. Design and typography allow for problem-solving through creative expression while adhering to rules and order. *Evolutionary Type* is the experience of viewing a subject matter through a new, uncommon lens, discovering and learning something at the same time. It is a project that can continue to change as evolution, typography and design continuously adapt to their environments.

While the comparison may seem unconventional, several of the readings included in the research compare biological evolution to the development of language. Coyne uses this example explicitly in his book *Why Evolution is True*:

The evolution of languages can be traced back to the distant past, and a family tree drawn up, by cataloging the similarities of words and grammar. This is very like reconstructing an evolutionary tree of organisms from reading the DNA code of their genes (177).

The comparison between language and evolution has been drawn extensively and there are entire books dedicated to the similarities of the two subjects, such as Steven Pinker's *The Language Instinct*. Language as a form of written communication is dependent on, but not restricted to, human interactions, history, and incentives. Typography is a visual form of verbal language and has many of the same influences. With such parallels between language and typography, it seems natural to speculate what would happen if the comparisons so often made between language and evolution are projected onto typography. This is what *Evolutionary Type* demonstrates.

In a sense, this project is a way to organize typography in a contextual framework. Within a design context, structures, designers, dates, and foundries have often been used to categorize typography, just as organisms have been categorized in various ways within their own biological framework. The latter categorization process is exemplified through the works of Charles Darwin, Carl Linnaeus, and the publications of Albertus Seba, *Cabinet of Natural Curiosities* (1731), Ernst Haeckel's *Art Forms in Nature* (1899-1904), and the *Journal of Bombay Natural History Society*, which had volumes published between 1886 and 1922. These are just a select few of several other natural history thinkers and publications. The above examples have been specifically mentioned because I drew



inspiration from them throughout my project. While the project is inspired from these works,

it does not aim to copy them, only learn from them. The book has been designed in a way that incorporates imagery and text, allowing content to drive design.

This project has not been a straight shot from beginning to end, throughout the year it has been in a constant state of flux, changing, morphing, evolving. It has ventured down many paths. With every step forward new questions arise, new problems to solve.

Evolutionary Type is not a finished project, only a draft of a continuously evolving work. A year is only the beginning to a project in need of so much more. With time and resources I can image a series of *Evolutionary Type* books, each a more in depth telling of one of the stories. While the audience is meant to come away from the piece having had a learning experience, it has been more of a learning experience for myself than any viewer can grasp. It has been a project that involved more time spent reading, writing, and researching than actual designing. It has been a project that required expertise in not one, but two different fields of knowledge, and the creativity to combine them.

If the audience comes away having learned something, or having merely enjoyed the experience of the book, I consider the project a success. *Evolutionary Type* is about the process of learning and experimenting. While the content is based on scientifically and historically accurate facts, it has been written and visually designed to tell a story, draw metaphors and emphasize certain perspectives more than others.



IP off site exhibition at Ann Arbor Art Center, April 2013

Selected Bibliography

- Bringhurst, Robert. *The Elements of Typographic Style*. 2nd ed. Vancouver: Hartley and Marks, 1992. Print.
- Coyne, Jerry. *Why Evolution Is True*. New York: Penguin Books, 2009. Print.
- Darwin, Charles. *The Origin of Species*. New York: P.F. Collier & Son, 1937. Print.
- Fish, Charlotte. "A Short History of Design." *Dhub.org*. Powerhouse Museum, 2006. Web. <<http://www.dhub.org/a-short-history-of-typography/>>.
- Garfield, Simon. *Just My Type: A Book about Fonts*. NY, NY: Gotham, 2011. Print.
- Garneau, David. "Art Science and Aesthetic Ethics." *Imaging Science: Art, Science, and Social Change* (2008): 27-29.
- Haeckel, Ernst. *Art Forms in Nature*. New York: Dover Publications, 1974. Print.
- Langdon, Smith. "Evolution." *Evolution, by Langdon Smith (1858-1908)*. N.p., n.d. Web. 08 Oct. 2012. <<http://msuweb.montclair.edu/~furr/int/evolution.html>>.
- Seba, Albertus. *Natural Curiosities: From the Cabinet of Albertus Seba*. Köln: TASCHEN, 2008. Print.
- Shubin, Neil. *Your Inner Fish*. New York: Vintage Books, A Division of Random House, 2009. Print.
- Stuart-Baker, E. C. "The Bulbus of North Cachar." *The J. of the Bombay Natural History Society* 1.8 (1893): n. pag. Print.
- Winston, Sam. London based artist.

