

Serendipity: Expect The Unexpected

Mathilde POIZAT-AMAR and Nina ROLLAND

Horace Walpole's "Serendipity" has become a word commonly used in a wide range of disciplinary fields. Two recent books explore contemporary uses of the concept, in relation both to professional research and to creative processes more generally.

Reviewed: Pek van Andel and Danièle Bourcier, *De la serendipité dans la science, la technique, l'art et le droit. Leçons de l'inattendu*, Paris, Hermann, 2013 & Sylvie Catellin, *Serendipité, Du conte au concept*, Paris, Seuil, 2014.

From serendipitous music to serendipitous politics, serendipity seems to have become a new way of looking at creative processes, to such an extent that the French dictionary *Larousse* made this noun "word of the year" in 2009. At a crossing point between chance, curiosity and rigorous interpretation, serendipity seems to gather humanities, social sciences, sciences and everyday life practices of creation and research. What is the role of serendipity in the creative process? Why is it becoming so prevalent in academic discourse, and how does it challenge today's practices and theory of research?

Pek van Andel is a researcher in Medical Sciences at the University of Groningen as well as an expert on serendipity, and Danièle Bourcier has a background in law and linguistics and is Director of Research at the CNRS. Looking at numerous disciplines and encompassing various perspectives in their book, they provide a clear definition of serendipity: "an ability to discover, to invent, to create or to imagine something new without looking for it, by means of an extraordinary observation and a correct interpretation of it" ("la capacité de découvrir, d'inventer, de créer ou d'imaginer quelque chose de nouveau sans l'avoir cherché, à l'occasion d'une observation surprenante qui a été expliquée correctement" p.9).

Sylvie Catellin is a lecturer in Information and Communication Sciences at the University of Versailles St-Quentin-en-Yvelines. She has published many articles on the notion of serendipity linked with history, literature, technologies and Internet. Her book gives an account of the history of the notion from the 18th century to the present-day, and its progressive inclusion in the scientific sphere. It aims at exploring the role of serendipity in both professional research and creative process in general, and in doing so, hopes to open new horizons to the institutionalised practices of research.

A fictional motif

From microwave ovens to Velcro, endless examples of unexpected discoveries suggest that serendipity is a common phenomenon that occurs in a wide range of disciplinary fields. Despite this, the noun sounds foreign to many ears. As both books point out in their first chapters, the word “serendipity” doesn't take its roots in the scientific world but rather in the field of literary fiction. Catellin provides the reader with extensive research into the literary origin of the word and its influences in later literary works. Interestingly, her own research demonstrates a degree of serendipity throughout her book. According to her, the word “serendipity” was first used by the Englishman Horace Walpole who wrote to his friend in 1754 about a tale that he had read, “Voyage et aventures des trois princes de Sarendip” [Travels and adventures of the three princes of Sarendip], adapted from a Persian tale by the Frenchman Chevalier de Mailly in 1719. The three princes of Sarendip are described in the tale as particularly perceptive: they demonstrate an extraordinary ability to describe very accurately a camel that they have never seen, only by examining the traces that the animal left on the road.

“Serendipity” is therefore firstly understood as a quality of the princes of Sarendip, described by Walpole as this ability to decipher what once existed from the clues that are accidentally left to the eye of an observer, an “accidental sagacity” (“sagacité accidentelle”, p. 25). Catellin argues that major pieces of literature have since been deeply influenced by serendipity as a literary motif. Zadig, the eponymous character of Voltaire's novel, is able to give a precise description of a dog with long ears thanks to the mere observation of the steps left on the sand, just like the Sarendip princes. This reasoning, named abduction, is very much present in crime fiction; stories of Edgar Allan Poe or Conan Doyle provide the reader with many accidental and lucky findings, or ‘Eureka’ moments.

In addition, Catellin points out that fictional stories not only appear to offer a platform for serendipity to develop as a literary motif, but present the concept as being part of the experience of writing, and of reading. The author identifies this phenomenon in some works written by members of the OuLiPo group, as well as indicating some experimental pieces of work which offer a striking example of the role of chance in the creative process, such as generative literature (“generative” p.189). Marc Saporta's novel *Composition N°1* (1962) offers the reader a chance to read an “infinite number of different stories” by giving them the possibility to shuffle the detachable pages of the book like a card game, hence creating a new random sequence of events every time the pages are mixed up. Chance, curiosity, and interpretation, which are necessary to the existence of serendipity, are found here at the heart of the experience of reading. However, according to the author, the motif of serendipity remains restricted to the literary field up until 1930. Van Anandel and Bourcier add that the expansion of the notion in other fields started with Robert Merton in the sociology of sciences in 1945.

Classification of serendipity: sciences, technology and law

The ambition of van Anandel and Bourcier is to offer a broad understanding of the concept of serendipity by dissecting it. It is paradoxically by relying on such a

“scientific approach” that the authors manage to frame the empirical nature of serendipity. As fine observers themselves, the authors enumerate different perspectives of definition and weave a terminological network: chance, hazard, sagacity, accident, anomaly, abduction, intuition are all constitutive terms of serendipity but never synonyms of it. This attempt to qualify the concept leads van Anandel and Bourcier to quantify and classify serendipity. According to them, there are three degrees of serendipity: positive serendipity (where a discovery is made without looking for it, for example Pasteur’s discovery of anthrax bacteria), pseudo-serendipity (where a discovery is made via a different path from that which was originally planned, for example Flemming’s discovery of penicillin) and negative serendipity (where a discovery is made but is incorrectly interpreted or explained, like the discovery of the New World by Christopher Columbus, identified first as the Indies). Following this logical approach, the book addresses numerous and diverse cases of serendipity, classified under forty types.

Among these cases, some held our attention: the Foucault pendulum, demonstrating the rotation of the Earth, belongs to the category “unexpected observation of an analogous phenomenon in a similar context” (p. 138); radioactivity – while working on phosphorescence in 1896, Becquerel observed that Uranium salts emitted rays – is presented under the category “controlled observation” (p. 147); and Viagra, exposed under the category “side effects” (p. 168), was originally created to fight against hypertension and angina pectoris before being commercialised for its side effects. Serendipity seems to be present in all domains, particularly in cooking (who has never asked themselves: who came up with the idea of eating this?); the most famous example is probably the *tarte tatin*, accidentally spilled by one of the Tatin sisters. In between other “sublime misfortunes” (p. 163) and “natural experiments” (p. 170) are situated other “serendipitous” inventions such as the Internet, Frisbee and abstract art. Although this rich classification helps us to understand the concept, it seems to stretch the phenomenon at times: when Laënnec saw children playing with a beam, one listening at one end while the other was scratching the other end, he had the idea to create the stethoscope. Van Anandel and Bourcier classify this event under the “unexpected observation of an analogous phenomenon in a similar context” category when it seems to be a pure example of inspiration, as it happens in the arts. However, the word is not mentioned in that context. This would mean that every artist or scientist inspired by an everyday scene is somehow subject to serendipity.

A final implication of the concept is its role in collective experiences. A whole section of van Anandel and Bourcier’s book is devoted to law and to the non-anticipated consequences (positive or negative) that a law can produce on society, defining these as ‘legislative serendipity’: “The ‘serendipitous’ effects show that we belong to complex and dynamic systems, that is to say to ramified and reticulated systems and that it is difficult to react in a preventive consequential manner” (“Les effets ‘sérendipites’ montrent que nous sommes dans des systèmes complexes dynamiques c’est-à-dire des systèmes ramifiés, réticulés et qu’il est difficile d’avoir une attitude conséquentialiste ‘à coup’” p. 255).

How to include serendipity in the practice of research?

Those two works help to illuminate some aspects of discovery as a mental process as well as an institutionalised practice. They also open up epistemological and

political questions, by problematizing the relevance of serendipity in today's research practice. What does it mean to 'make a discovery' nowadays? Can serendipity be included in the practice of research?

The authors draw attention to several factors that prevent serendipity from playing a role in research practice. According to Catellin, a rigid academic structure which opposes literature to science and leaves little room for surprise, accident and exchange between academic fields is to blame. Although what is planned does not belong to the serendipity order anymore, the author suggests two elements that could help to encourage the prevalence of serendipity within the practice of discovery. First, a reflexive approach on one's own activity of research ("en analysant [ses] propres activités de découverte" p. 201) would help in stimulating the occurrence of serendipity in the very process of research, by stimulating an active mind, open to surprises and to new ways of thinking discoveries. Secondly, the institutions that support research as a professional practice would benefit from new structures allowing for some "indisciplinarity", which is defined as a "practice consisting of starting a research from a personal questioning, a surprise, by using and crossing disciplinary knowledge in a free manner, yet without falling into any disciplinary category" ("indisciplinarité [...] c'est la pratique consistant à élaborer une recherche à partir d'un questionnement personnel, d'un étonnement, en utilisant et en croisant librement les savoirs disciplinarisés, mais en ne se soumettant aucune discipline" p. 210). Similarly van Anandel and Bourcier recall that serendipity is a post-hoc phenomenon, recognizable once it happened, but they also encourage researchers to learn how to observe, to take off their blinkers ("l'art d'enlever des oeillères" p. 293), to be audacious and to make the most of the "sublime mistake" (p. 11).

In conclusion, for a phenomenon leading to extraordinary findings, the breadth of its applications sometimes leaves us lost in serendipity. And yet the two books, in their differences and complementarity, offer an accessible apprehension of such a rich concept. They remind us that the unknown is there to be found, as Van Anandel and Bourcier put it: "what we call 'chance' or 'hazard' is nothing other than the product of our ignorance" ("Ce qu'on appelle le hasard n'est que le produit de notre ignorance" p. 245).

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