



On Creativity and Serendipity

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The current collection gathers the perspectives of academics and creative practitioners to discuss the role of serendipity in domains as varied as creative problem solving, sculpture, writing, theatre and design. The chapters in this volume address issues such as the nature of the prepared mind, the role of accidents, serendipity as a skill or way of engaging with the world, and indeed, whether serendipity as a concept is even possible within the coupled, dynamic system which so often marks creative engagement with the world.

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Serendipity and creativity are both concepts that cover a broad range of phenomena. At first glance, the creative domains in this book are spread widely and perhaps too widely to be contained within a single discipline: problem solving, scientific discovery, music, art, theatre, sculpture, textile design and writing. Creativity is a heterogeneous field, loosely held together by the bipartite, “standard” definition—as something which requires novelty, and either meaningfulness or usefulness (Runco & Jaeger, 2012). This definition of creativity has led to many arguments about what actually *counts* as creativity, and there is a risk of conceptual dissipation, to the point where so much falls into the category that the definition fails to define (see Ross, Simonton, this volume). However, these fields are united by the investigation of how novelty is generated and taken up and, alongside this, how progress is made. In short, people have an urge to avoid stasis and to explore unknown territory. Creativity studies are concerned with the processes that underlie this exploration of the unknown.

Serendipity is perhaps even more contentiously defined. The word “serendipity” was famously coined by Horace Walpole in 1754 in a letter to Horace Mann, in which he described the *sortes Walpolianae* thus:

This discovery I made by a talisman, which Mr Chutes calls the *sortes Walpolianae*, by which I find everything I want, a *pointe nommée*, wherever I dip for it. This discovery, indeed, is almost of that kind which I call serendipity, a very expressive word, which as I have nothing better to tell you: you will understand it better by the derivation than the definition. I once read a silly fairy tale, called the three Princes of Serendip: as their Highnesses travelled, they were always making discoveries, by accidents and sagacity, of things which they were not in quest of: for instance, one of them discovered that a mule blind of the right eye had travelled the same road lately, because the grass was eaten only on the left side, where it was no worse than on the right – now do you understand Serendipity? One of the most remarkable instances of this accidental sagacity (for you must observe that no discovery of a thing you are looking for comes under this description) was of my Lord Shaftsbury, who happening to dine at Lord Chancellor Clarendon’s, found out the marriage of the Duke of York and Mrs Hyde, by the respect by which her mother treated her at table.

These few lines raise most of the key questions which have made serendipity a “slippery concept” (Makri & Blandford, 2012). First, there is the nature of the “sagacity” or personal wisdom required to make the most of what is stumbled across in the course of everyday life. Second, the nature of the accident and third, the role of what constitutes the quest in the line, “a thing which they were not in quest of”. This slipperiness licences multiple interpretations of the core text. In their overview of the word and concept, Merton and Barber (2004) suggest that the notion of “serendipity” has come to function as a cipher, allowing writers the chance to rewrite definitions that reflect their own preconceptions. Napolitano (2013, p. 293) makes a similar observation, suggesting that there is a recurring pattern of “serendipity’s meaning being ‘refracted’ by the behaviors and experiences of its users”. The collection of chapters in this volume lend further evidence to this claim, leaving these three core aspects still inconsistently defined.

However, the longevity of the word and its attractiveness as a category suggests that it captures an important aspect of human experience. Indeed, while Walpole invented the word, the concept it describes clearly existed prior to this definition and has been described in different ways by different writers (Alcock, 2010; Silver, 2015). We suggest that we can focus on the core notion, that is, the interaction between human agency and environmental contingency which marks so much ongoing experience. From Walpole to Louis Pasteur’s “le hazard ne favorise que les esprits prepares” (Pasteur, 1854), writers on serendipity emphasise this dual nature with varying degrees of poeticism. Shulman suggests it is “a process hovering ambiguously between the [...] incisive mind and the wheel of fortune” (Merton & Barber, 2004, p xiv) and Copeland describes it as being “at the intersection of chance and wisdom” (Copeland, 2019, p. 2385).

So, despite the at times frustrating ambiguities inherent in the definition above, we believe that Walpole has leant researchers a useful hook on which to hang thoughts of how the combination of chance and skill play out in different domains. More modern scholarship on serendipity (such as those examined in these chapters) has moved from a detailed examination of the ambiguities inherent in Walpole’s letter to thinking about how serendipity can be used to support our understanding of the process of

human engagement with environmental uncertainty and to support the investigation of how we interact with events in a non-linear manner. This lends support to a model of human thought and behaviour which reflects much less rational planning than traditionally allowed. This model is, in turn, intrinsically linked to novelty and therefore, creativity. As Austin (1979, p. 61) writes, “to be fully creative, you must respond positively to the risk and challenge of exploring new frontiers”. Thus, creativity and engagement with uncertainty are seen as intertwined. Indeed, one of us argues (Ross & Arfini, forthcoming) that open and dynamic systems are the only way for true novelty to emerge—a point Simonton also considers in his chapter in this volume.

The role of luck in the creative process has been documented in several places. Notably, Csikszentmihalyi’s collection of interviews with ninety-one eminent creative professionals across all domains led him to write (Csikszentmihalyi, 1996, p. 46):

When we asked creative persons what explains their success, one of the most frequent answers – perhaps the most frequent one – was that they were lucky. Being in the right place at the right time is an almost universal explanation.

However, a closer examination of one such case study in luck described by Csikszentmihalyi reveals that it is rather an instance of serendipity, that vexingly contingent mix of skill, luck and timing. Early on in the book, he discusses the work of Vera Rubin who discovered that stars belonging to a galaxy do not all rotate in the same direction. Although the moment that precipitated that realisation was triggered by an “accidental observation” (p.2) of two pictures taken almost a year apart, the resulting story illustrates that “she could use this luck only because she had been, for years deeply involved with the small details of the movements of the stars”. It is clear that while the trigger was external, to exploit and explain the phenomenon required internal actions. Such an accident would be useless to a neuroscientist who would not know how to interpret them, just as Rubin would have been unable to interpret the output of an fMRI scan. Luck therefore is recognisably necessary, but it is not sufficient to fully explain creative success.

There is perhaps even more discomfort about allowing accidental moments into the artistic creative trajectory (see Lock & Sikk, Piñeyro, Ross, this volume). Weisberg (2006, p. 60, emphasis added) summarises the problems with accidental creativity thus:

Let us say that I am a painter, and one day I accidentally spill paint on a canvas, which leaves a stain on my partially finished work, making it unusable. Let us further assume that I am visited by the director of a museum, who sees my stained canvas, loves it, and purchases it for display in the museum. The painting is then discussed in art books, and other artists use my spilled work as the basis for innovations of their own. My piece of junk has thus become part of the world of art. Was I creative in producing that painting? *No* (...).

As Piñeyro (this volume) shows we can move beyond this somewhat disingenuous thought experiment to consider the work of those such as Bruce Nauman who specifically create situations and allow those situations to unfold out of control and to do the creating for them—in Nauman’s case, mice in his workshop. Here the locus on artistic intentionality shifts and the “doing” happens beyond the artists’ direct control. Of course, in this case we can more easily recognise that the creativity here lies not in the traces of paint (nor the routes the mice take in the case of Nauman) but in creating the situation and in the reaction to these events and their framing (see Copeland, this volume).

This instinct, that creativity requires clear intentionality (otherwise described as needing to be meaningful or purposeful), underlies anxieties about the kind of creativity generated by non-intentional algorithms and puts accidentally created work of great beauty outside of the bounds of creativity research. Elsewhere (Ross & Vallée-Tourangeau, 2020), one of us has argued that this is in part because the role of chance in creativity undermines the notion of creativity as an epistemic virtue; it is hard to reconcile the idea of a creative genius with the idea of contingency. It also belies the very real nature of the work that is required for any form of artistic creativity. As the chapter from March and Vallée-Tourangeau (this volume) demonstrates, a work of art requires significant effort, attention and time to come to fruition. We suggest that the acknowledgement of

the role of a certain level of skill in dealing with chance when it comes to creativity is an important way to reconcile the underlying instinct that a simple response to luck is not “true” creativity (see Simonton, this volume). For this reason, we suggest serendipity is a better framework than pure luck or accident.

Furthermore, recent research in creativity is moving away from the “I” paradigm (Glăveanu, 2010), that all creativity comes from the view of a creative genius. That is, there is a move to view creativity as more systemic (Csikszentmihalyi, 2014; Montuori & Purser, 1995), which creates a space for the role of distributed creative agency and invites us to use serendipity as a lens to explore how that distribution happens. We suggest that the dual nature of serendipity, the requirement for there to be an input from both inside and outside the system, allows us to grant space to socio-material agency while still acknowledging the importance of the human. As Csikszentmihalyi (1996) argues, accepting that some things are beyond our control does not undermine the role of creative and artistic talent in creativity but acknowledges that the whole creative trajectory from idea to absorption lies in a social context and is fraught with contingency. All the writers in this volume stress that this distributed agency should not be considered a sharp division, but that rather serendipity is a relational concept that unfolds through doing and action—blending and destabilising traditional notions of cause and effect. A form of knowing-through-doing both generates and is generated by accidental encounters with people, things and events (see Copeland, this volume). This leads to the delightful yet vexing contingency of creative processes. Part of understanding the characteristics of contingency involves engaging directly with serendipity. We argue that it is likely a serendipity-based approach will enrich our understanding of the whole creative process (although see March & Vallée-Tourangeau, this volume, for a position more critical of this research programme). We further suggest that being comfortable with a process which is inherently contingent may be important as creativity researchers grapple with the complexity of their own research area.

This complexity, of a concept which requires subjectivity to be understood—as one of us has argued, a person must experience an event as serendipitous for it to be serendipity (Copeland, 2019)—and which

is yet also dependent upon something beyond personal experience, is reflected in the ways that the writers of the following chapters discuss the notion. At the extremes we find the work from Simonton and the work of Le Hunte, who approach serendipity from entirely different directions—Simonton suggests that we can submit serendipity to a formal analysis, Le Hunte uses her own expertise as a novelist to reflect on the role of serendipity in her creative process. We see similar tensions within the chapter from March and Vallée-Tourangeau, in which the writers are forced to take on positions that they find uncomfortable and aim to convey an in-the-moment perspective in retrospect. The position of the serendipity “narrator”, whether the writer of the chapter or the person identifying and experiencing serendipity, is incredibly important when we consider its relational nature. As Ross and Glăveanu’s chapters make clear, the surprise necessary for serendipity is an inherently relational one; we must take into account the position of the person experiencing the surprise as well as the event that generates the surprise. When Gilhooly writes that serendipity does not have to be noticed by the person experiencing it in the case of subliminal hints given to problem solvers, the definition of serendipity shifts and rests with the researcher. This complexity of approaches and perspectives invites a pluralistic understanding.

The Role of the Agent: Sagacity

Consider the various ways that the phenomenon of the prepared mind is described and interrogated in the chapters of this book. Pasteur’s famous (mis)quoted phrase, “chance favours the prepared mind” has accompanied accounts of serendipity and sagacity from the time of Walpole. Whereas in science, however, serendipity is often about *finding* something that wasn’t looked for, in the creative arts serendipity results in the *production* of something that wasn’t part of the original plan for the work. This is a stark difference between artistic discovery and scientific discovery. Whereas scientific progress is seemingly inevitable, artistic creativity tends to be far less teleological (although see Martindale, 1990). For what, then, must the creative mind be prepared,

for serendipity to happen? As Glăveanu (this volume) suggests, the mind cannot be constantly prepared, and the open-endedness of creativity together with the element of chance means that we cannot know for what, exactly, one ought to prepare. In response, Glăveanu suggests that rather than being fully prepared in the classic sense of having all the right things in place before the event, we should conceive of the prepared mind in terms of curiosity and wonder.

In the chapter by Piñeyro, the prepared mind is more about being ready to engage: one must be prepared to be flexible, to receive the nuance of the material with which one is working, and to respond in kind. The prepared mind is a forward-looking mind, “ready for anything” that may come its way, but within the constraints of the creative project and the materials that will constitute it. March and Vallée-Tourangeau convey preparedness as more of a process, a making-oneself-ready for new ideas about how to work with a material by working with the material itself: as one plays and thinks and goes on through time, the relationship one has with the material grows more complex and intimate, and one’s mind becomes more prepared for the creative turn. Le Hunte draws our attention to this idea of preparedness as a relational term with her depiction of serendipity as the muse’s sister, someone she can get to know and yet a relationship that will require time and attention (and empathy) to develop. Gilhooly emphasises the role of an incubation period in his chapter, how serendipity occurs often after one has reached the state of impasse and has put the problem aside. To return to Glăveanu’s chapter, we see there that the prepared mind is better thought of not as a “depository” but rather as a “network of relations and entanglements with objects, ideas, people, places, institutions, and cultural practices”. Copeland does something similar in her approach to serendipity through *metis*, the “cunning wisdom” of an individual who is fortified by their own past and expertise to contribute something unexpected and novel to a changing situation. Thus, the prepared mind, in light of the work contained here, is more about being in a state of readiness, more so than having the right tools and expertise to hand when chance arises.

The role of expertise has been addressed—although the issue has not been resolved—in the serendipity literature, particularly in respect to

serendipity in science. Some have suggested that the novice is more likely to be serendipitous, because their expertise does not lead them to throw away potentially valuable accidents as presumed mistakes (e.g. see Myers's 2011 collection of tales from medical history). However, as Merton (1948) notes, those who are "steeped in theory" are more likely to recognise the value of an unexpected observation than the naïve. One's own expertise is also in relation to the context in which one finds oneself, however, as several of the chapters in this volume discuss: with Ross, we take a close look at the interplay between an individual's ability to notice something potentially serendipitous, and the willingness of the world around them to accept it as a discovery. Copeland notes specifically the role that context can play in constraining or enhancing the individual's ability to notice and follow up on accidents that may be serendipitous. Even Simonton, who offers a more internalist perspective on the prepared mind than other, more relational accounts in this volume, suggests that some of the expertise that historical figures demonstrate in serendipity lies in their ability to assess the context they are in: he notes specifically Galileo's insight into the extra value that discovering moons around Jupiter added to his own patronage by the Medicis, for whom he could name those celestial bodies.

Turner and Kasperczyk externalise the prepared mind, in a way, in their exploration of immersive theatre. In this context, the actors and directors construct a stage for serendipity: they place the minds of the audience into a prepared context; the minds of the audience are prepared, having bought tickets and being led through a constructed, immersive environment, to experience something unexpected and new as they step into the stage. They note that the serendipity is up to this relation, however: not every audience member will experience it, and not every attempt to cultivate it by the actors and directors will be successful. Further, the serendipity experienced by the audience during and in reflecting upon the theatrical event will be personal, and so may happen in ways beyond the predicted scope of the play's intentions. But this is the very nature of immersive theatre, argue the authors: to be opened in its effects. Similarly, Lock and Sikk, in their chapter, discuss how serendipity represents an interruption incorporated into the flow of a musical piece—an interruption or flaw is not a failure when taken

up by the performer into an improvised piece, and a true improvisation can have no failures, only change. These approaches seem to suggest the prepared mind can be better seen as a conditional and contextual cognitive state than an innate, stable and personality trait.

The prepared mind also needs to be surprised. This notion of surprise is perhaps more complex than it at first appears. As noted already, it seems to require both naïveté and a deep theoretical embeddedness. As Arfini et al. (2018) memorably write:

This is to say that an unexpected serendipitous event is never a non-sequitur: it sparks an “aha!” reaction, not a “How is that even possible?!” Fleming’s “Oh!” reaction was when he managed to frame and understand the antibiotic effect of a mold. He did not enter his laboratory to find a moldy culture singing the chorus of Mamma mia!: that would have sparked another kind of reaction.

A serendipitous surprise requires that the person experiencing it knows and understands what is usual so that the unusual can be recognised and reasons for it postulated. And yet, as Piñeyro notes, knowing too much about what is usual can hinder one’s openness to the unusual: in her chapter, her own ignorance about the materials with which she was working allowed her to make the mistake—to generate the accident and to be open to it as an opportunity for further exploration—that led to a new creative trajectory. The treatment of the phenomenology of surprise in the following chapters is linked to the place they assign for serendipity in creativity: when the accidental becomes expected, such as in the creative process experienced by March in his chapter with Vallée-Tourangeau, or in true improvisation as described by Lock and Sikk, surprise is diminished as the creator adopts the appropriate attitude, one that expects and accepts the accidental inherently as opportunities for taking new paths and a new possible outcome for the creative process itself. As accidents become expected and no longer generate true surprise, suggest these authors, creators are no longer experiencing serendipity, and thus their explorations further elucidate the importance of the accident to our understanding of serendipity in creativity.

The Role of the Environment: Accident

Of the two parts of serendipity, the accident is perhaps the most controversial, underexplored and yet most essential. A focus on the accident moves serendipity from a “capability” (de Rond, 2014) to an event. It also challenges human centric forms of understanding and switches the normal order of events from one where a human agent imposes their will on an inert matter (a form of hylomorphism such as described in Ingold, 2010) to one where there is accident followed by sagacity. This inversion of traditional human cause effecting a material change is destabilising and also evokes anxiety around creative agency, as we suggested above.

As we see throughout the chapters in this volume and in the following sections, such a stark binary becomes hard to sustain. Indeed, as Ross points out, the “pure” accident with no prior human action rarely occurs and a naïve understanding of accident in this way would needlessly restrict what we consider serendipitous. March and Vallée-Tourangeau (this volume) suggest that there can be no accident within a system and use this to argue for the dissolution of serendipity. We agree with the perspective that an accident has to be something that disrupts the flow of the system and therefore comes from outside, so assuming a continuously extending system excludes accidents from consideration. It is for this reason we are unclear to what extent the internal serendipity discussed by Gilhooly and Simonton in this volume is really possible (as both also question). We have sympathy with Gilhooly’s description of the complexity and contingency of a network approach to this internal serendipity, but would suggest that the concept of serendipity is easier to sustain when thought of as sparked by external stimuli (whether that initial spark is material or social).

In other words, given our own work and the work in this volume, our vision of serendipity takes it to be more than a simple combination of existing factors. As Boden (1994) suggests, new combinations could lead to improbable moments, but true creativity includes not only that which is improbable but also that which is impossible. Therefore, in our view, while serendipity requires a systemic approach, we also query the notion that a system should be extended indefinitely without reflection: a view from wholly within is problematic, just as a view from nowhere

would be. Rather, the accidents in the creative processes described in this volume tend to illuminate the boundaries of the system at hand, and the authors draw attention to these boundaries even as they demonstrate how interference by accidents, and sometimes serendipity, tend to extend them outward. Systemic boundaries are expanded, that is, both by pushing outward and by things outside of it breaking in.

What defines an accident is, as referenced by Piñeyro, that it is unanticipated and unplanned. It must also be experienced as that. As Ross writes, the notion of an accident is relational on both a personal and broader scale. Two chapters in the current collection, Lock and Sikk and March and Vallée-Tourangeau, question whether the conscious experience of an accident is possible when the artist and their material (whether clay or improvised music) are in flow. Indeed, Lock and Sikk's chapter suggests that serendipity may be a temporary stage in the development of musical virtuosity, one where accidents are viewed as problematic, and then become incorporated so that the pinnacle of musical development would be that point when accidents happen but are no longer perceived as such. March and Vallée-Tourangeau suggest that accidents are impossible if we see intentionality as being extended into the system. These chapters thus suggest a complexity around the relationship between artistic flow and serendipity. Perhaps a certain naïveté and distance from the material is required (as suggested by Turner and Kasperczyk) for serendipity to become manifest, or perhaps the accident may trigger that distance and disrupt flow when it is recognised. Phenomenological approaches to creativity are underrepresented in the literature and we suggest further research of this nature would be useful to understand both the creative experience and the experience of serendipity.

Just as we have seen above with the reflections on the nature of sagacity, these reflections on accidents also indicate a complexity which belies their seeming simplicity. The accident is as relational as the prepared mind. The contingency of serendipity calls for further reflection on the complex dynamics involved in each aspect of these parts; we see it as an indication that we need to look beyond a simplistic reductionist model to model serendipity (and creativity) instead as emergent phenomena.

The Entangling of Agency: The Role of Emergence

As March and Vallée-Tourangeau argue, it is impossible to truly understand serendipity as a bipartite phenomenon. If it were, then designing for serendipity would be an easy case of generating more random moments and watching skilled human agents exploit them. Such a plan is tantalisingly attractive but rarely survives sustained examination (Olma, 2016).

So, while cultivating serendipity outside of creativity is often seen as maximising chance opportunities in terms of quantity, here, as in the serendipity literature, we see that the quality of an encounter has more influence on its productivity than the number of encounters. This is not to say that creating opportunities for accident and chance is not desirable—chance has long been used by creatives as a method, as we see in several of the chapters here (particularly those by Sneddon and Piñeyro, but also see Simonton, Copeland, Turner & Kasperczyk). However, as we have seen above, this is not the same as simple randomness: the fact that an encounter happens by chance is not sufficient for it to be deemed creative.

However, research from Makri et al. (2014) shows us that an artistic sensibility may seek spaces where accidents may be more likely to happen. And indeed, Piñeyro's own chapter demonstrates how accident can become sedimented into a coherent structure. Piñeyro (borrowing from Iverson) describes two methods, the retrospective harnessing of the accident and the intentional generation of accident to spark a creative moment. But by incorporating such methods into our process, the binary of intention and accident becomes harder to sustain. Turner and Kasperczyk take this to be less of a problem than a potential fruitfulness: by taking serendipity to be the purpose of immersive theatre, the creative impact of the theatre experience extends into its influence on life in general, such as when audience members take their experience into their own lives to have serendipitous moments generated after as well as during the performance. Directors of such theatre cannot intend to have these effects, but they can intend to create opportunities for unintended effects through serendipity. Copeland discusses the indirect cultivation

of serendipity through providing the means to cultivate the related skills and the (supportive) space in which to practice those skills. Thus, more than the generation of more chances by introducing randomness is needed; rather, because serendipity emerges from the stream of human interaction with the uncertain and dynamic surroundings, the generation of such experiences and their results must take that environment to be complex, systemic and emergent.

Conclusion

Serendipity is a complex term. Like, creativity, it remains unclear to what extent writers and researchers on serendipity are considering the same phenomenon, and its positioning as an event, an experience and also a skill invites a pluralistic and fluid approach. Yet, it is repeatedly cited as a key component of the artistic process and human experience. This is perhaps because serendipity is concerned with understanding how people navigate uncertain and incredibly complex environments. These environments are necessarily filled with unanticipated moments and interactions which may become more salient in moments of progress and discovery as material uncertainty transforms into human knowledge and understanding.

An Overview of the Chapters in This Book

Vlad Glăveanu: What's 'Inside' the Prepared Mind? Not Things, but Relations

Creativity theorist Vlad Glăveanu takes up the problem of the prepared mind in serendipity theory; in creativity theory, the assumption that mind-meets-world has the effect of creating an impossible dichotomy, in contrast to recent work on the inter- and iterative relationship between our inner and outer worlds. Rather, he suggests, we can work with the concepts of curiosity and wonder to understand how accidents motivate us toward creativity. Surprise in this account is distinctly relational,

an experience that moves us between the known and the unknown, the familiar and the unfamiliar, and back again; to understand this movement, we must look beyond the individual and her intra-psychic processes, to the context in which the experience of serendipity can be seen as a system of relations.

Samantha Copeland: Metis and the Art of Serendipity

Through the lenses of different forms of rationality taken from the ancient Greeks—*episteme*, *techne* and *metis*—philosopher Samantha Copeland takes us through various ways of seeing sagacity as an ‘art of serendipity’. She focuses in the end on the promise of using *metis*, or “cunning wisdom” as a frame for both describing and instructing others in this art, that combines the generation, recognition and follow-up of accidents as opportunities. Due to the embodied, contextual and personal nature of the expertise that *metis* captures as a mode of reasoning in a dynamic, uncertain world, Copeland suggests that the art of serendipity must be practiced with each other as well as in our material engagements and in our minds.

Wendy Ross: Heteroscalar Serendipity and the Importance of Accidents

Cognitive psychologist Wendy Ross describes in this chapter a foundational problem we will have to tackle, if we are to study the phenomenon in creativity: accidents and sagacity come together at various levels, from the socio-historical to the personal, to the micro- scale, which presents a shifting sense of serendipity that can be difficult to grasp. Focusing on microserendipity in this chapter, Ross highlights that sagacity may be ubiquitous in creativity, but the accident marks out serendipity (retrospectively, at least) as distinct. In light of this, serendipity can be narrowed down, at the micro-level, to the experience of a break in one’s flow state, when the accidental forces us to reassess artistic intent.

Rose Turner and Hayley Kasperczyk: Space for the Unexpected, Serendipity in Immersive Theatre

In this chapter, psychologist Rose Turner and practitioner Hayley Kasperczyk describe and look closely at the nature of immersive theatre, performances where the spectator becomes spect-actor, brought into the theatre as participants rather than audience. Through cultivation of a space meant to generate serendipity, directors and actors in immersive theatre approach their art as open-ended and contextual; each spect-actor will have a unique experience, one that may carry on past the bounds of the play itself. Serendipity is thus the bread and butter of immersive theatre, marking the success of an interaction between cultivated space and theatrical intentions of the director and actors, and the personal, experiential perspective of the audience member.

Ana Piñeyro: Fostering Creative Opportunities by Embracing the Accidental Within Practices of Making

In this chapter, textile and materials design researcher Ana Piñeyro uses a personal experience with an accidental turn in her work to explore the meaning of serendipity in art practice. She unpacks the practice of allowing the accidental to permeate one's work as an artist or manipulator of materials: in the narrative she shares, her own lack of expectations about how the material she is working with will respond allows her to experience an accidental reaction to the heat she applies, and thus opens up a realm of new possibilities. As a theoretical approach, Piñeyro proposes that serendipity is a method for creative interaction with one's materials, requiring an openness to both the process and the outcome that one may attain through working with them.

Paul L. March and Frederic Vallée-Tourangeau: Briefing for a Systemic Dissolution of Serendipity

Sculptor, Paul March and experimental cognitive psychologist, Frédéric Vallée-Tourangeau provide similar perspectives, from their different positions; each describing how serendipity becomes so integrated into the processes of creative making or laboratory-based problem solving that it appears to disappear. By focusing on Walpole's, less often cited description of serendipity as 'accidental sagacity', the authors draw attention to the idiosyncratic nature of the creative moment. Instead of looking at serendipity retrospectively and viewing accidents as things that interfere with well-laid plans, they concentrate on a microanalysis of the moment, first in the artist's workshop and second in the psychologist's lab. Their granular accounts of each environment demonstrate how the concept of the accidental dissolves into the present experience of creative manipulation.

Gerhard Lock and Jaak Sikk: Accident and Serendipity in Music Composition, Improvisation and Performance Art

With a focus on composition, improvisation and performance art in the realm of music, Gerhard Lock and Jaak Sikk closely examine the relationship between error or fault and serendipity in creative performances. With a particular focus on the perspective of the performer, the authors call attention to the vanishing point of serendipity: when true improvisation happens, the performer integrates all accidents into their creative process, and just as the concepts of error and fault no longer belong in such a context, serendipity too evaporates. Comparisons with the role of accident from the audience's perspective and from the perspective of composers and performance artists woven through the discussion serve to further elucidate the interaction between serendipity, fault and the accidental in the creation of music.

Bem Le Hunte: The Anableps Guide to Serendipity: Intentional Serendipity as Creative Encounter—A Decolonized, Literary Perspective

Novelist Bem Le Hunte offers in her chapter the ‘Anableps Guide to Serendipity’, exploring the concept and role of serendipity in her art through a semi-fictional narrative about her encounter with it, as an intriguing and mysterious creature and as a kind of muse, the Queen of Serendipity. The insider perspective she thus offers in this chapter gives insight into the fluidity of the artist’s relationship with serendipity, as the experience moves back and forth from interior to exterior perspectives toward sense-making. Through this journey we see various aspects of serendipity highlighted: the role of connections, trust, bias and choice, as well as the importance of encounters with our heroes to mark our journey by.

Andrew Sneddon: The Pleasure of not Knowing and the Importance of Serendipity in Contemporary Art Practice

Artist and researcher, Andrew Sneddon opens his chapter with a reflection on how a chance encounter while on an artistic placement helped him to break the feeling of ‘not knowing’. From this he moves to a comprehensive review of the role of chance in modern art practice, making the argument that the Cybernetic Serendipity exhibition was more an example of randomness than the use of a skilled engagement with chance. He then reviews work from the Artist’s Placement Group and discusses the risks and benefits associated with allowing chance rather than a plan to direct artistic activity before taking a close look at the way accident and sagacity plays out in the work of contemporary artists, Jeremy Millar and Adam Chodzko.

Ken Gilhooly: Problem Solving, Incubation and Serendipity

Cognitive psychologist Ken Gilhooly reviews in his chapter the various ways that incubation can lead to the solving of seemingly intractable problems. In particular, he suggests, ‘Mertonian’ serendipity (following Yaqub’s categories), the kind that occurs when we find a solution to a problem we are keen on solving, but in a surprising place or way. Incubation can create opportunities for serendipity via environmental cues from unexpected observations, or endogenously, as ideas combine in interesting ways while our mind wanders or we dream while asleep.

Dean Keith Simonton: Serendipity and Creativity in the Arts and Sciences: A Combinatorial Analysis

Dean Keith Simonton has examined serendipity at several points in his career as a creativity theorist, and this chapter closes our collection by consolidating those reflections and takes a closer look at the unique character of serendipitous creativity. Serendipitous creativity is an example of combinatorial creativity: like other creative combinations, serendipitous ones are three-factored; this chapter describes how the factors combining in serendipity are similar or different than other creative and non-creative combinations. Further, Simonton details in this chapter the particular nature of personal serendipity in creativity: for it to count as creativity, the accidental must lead to something of personal value, a creative product that is valued by its discoverer.

References

- Alcock, S. (2010). The stratiography of serendipity. In M. de Rond & I. Morley (Eds.), *Fortune and the prepared mind* (pp. 11–22). Cambridge University Press.

- Arfini, S., Bertolotti, T., & Magnani, L. (2018). The antinomies of serendipity: How to cognitively frame serendipity for scientific discoveries. *Topoi*. <https://doi.org/10.1007/s11245-018-9571-3>
- Austin, J. H. (1979). The varieties of chance in scientific research. *Medical Hypotheses*, 5(7), 737–741. [https://doi.org/10.1016/0306-9877\(79\)90035-5](https://doi.org/10.1016/0306-9877(79)90035-5)
- Boden, M. A. (1994). Précis of The creative mind: Myths and mechanisms. *Behavioral and Brain Sciences*, 17(3), 519–531. <https://doi.org/10.1017/S0140525X0003569X>
- Copeland, S. M. (2019). On serendipity in science: Discovery at the intersection of chance and wisdom. *Synthese*, 196, 2385–2406. <https://doi.org/10.1007/s11229-017-1544-3>
- Csikszentmihalyi, M. (1996). *Creativity: The psychology of discovery and invention*. HarperCollins.
- Csikszentmihalyi, M. (2014). Society, culture, and person: A systems view of creativity. In *The Systems Model of Creativity* (pp. 47–61). Springer.
- de Rond, M. (2014). The structure of serendipity. *Culture and Organization*, 20(5), 342–358. <https://doi.org/10.1080/14759551.2014.967451>
- Glăveanu, V. P. (2010). Paradigms in the study of creativity: Introducing the perspective of cultural psychology. *New Ideas in Psychology*, 28(1), 79–93. <https://doi.org/10.1016/j.newideapsych.2009.07.007>
- Ingold, T. (2010). The textility of making. *Cambridge Journal of Economics*, 34(1), 91–102. <https://doi.org/10.1093/cje/bep042>
- Makri, S., & Blandford, A. (2012). Coming across information serendipitously—Part 1: A process model. *Journal of Documentation*, 68, 684–705. <https://doi.org/10.1108/00220411211256030>
- Makri, S., Blandford, A., Woods, M., Sharples, S., & Maxwell, D. (2014). “Making my own luck”: Serendipity strategies and how to support them in digital information environments: Strategies for “seeking” serendipity and how to support them in digital information environments. *Journal of the Association for Information Science and Technology*, 65(11), 2179–2194. <https://doi.org/10.1002/asi.23200>
- Martindale, C. (1990). *The clockwork muse: The predictability of artistic change*. BasicBooks.
- Merton, R. (1948). The bearing of empirical research upon the development of social theory. *American Sociological Review*, 13(5), 505–515.
- Merton, R., & Barber, E. (2004). *The travels and adventures of rederipity: A study in sociological semantics and the sociology of science*. Princeton University Press.

- Meyers, M. (2011). *Happy accidents—Serendipity in major medical breakthroughs in the twentieth century*. Arcade.
- Montuori, A., & Purser, R. E. (1995). Deconstructing the lone genius myth: Toward a contextual view of creativity. *Journal of Humanistic Psychology*, 35, 69–112. <http://journals.sagepub.com/doi/10.1177/00221678950353005>
- Napolitano, C. M. (2013). More than just a simple twist of fate: Serendipitous relations in developmental science. *Human Development*, 56, 291–318. <https://doi.org/10.1159/000355022>
- Olma, S. (2016). *In defence of serendipity*. Repeater.
- Pasteur, L. (1854). *Oeuvres de Pasteur/réunies par Pasteur Vallery-Radot*. https://upload.wikimedia.org/wikipedia/commons/6/62/Louis_Pasteur_Universit%C3%A9_de_Lille_18541857_dans_les_champs_de_l%27observation_le_hazard_ne_favorise_que_les_esprits_pr%C3%A9par%C3%A9s.pdf
- Ross, W., & Arfini, S. (forthcoming). Serendipity and creative cognition. In L. J. Ball & F. Vallée-Tourangeau (Eds.), *Routledge handbook of creative cognition*.
- Ross, W., & Vallée-Tourangeau, F. (2020). Microserendipity in the creative process. *Journal of Creative Behavior*, 55(3), 661–672.
- Runco, M. A., & Jaeger, G. J. (2012). The standard definition of creativity. *Creativity Research Journal*, 24, 92–96. <https://doi.org/10.1080/10400419.2012.650092>
- Silver, S. (2015). The prehistory of serendipity, from Bacon to Walpole. *Isis*, 106(2), 235–256.
- Weisberg, R. W. (2006). Expertise and reason in creative thinking: Evidence from case studies and the laboratory. In J. C. Kaufman & J. Baer (Eds.), *Creativity and reason in cognitive development* (pp. 7–42). Cambridge University Press. <https://doi.org/10.1017/CBO9780511606915.003>