

Chapter 8

Serendipity as a Strategic Advantage?

Nancy K. Napier and
Quan Hoang Vuong

Who, over the age of 20, hasn't experienced a serendipitous event: unexpected information that yields some unintended but potential value later on? Sitting next to a stranger on a plane who becomes a business partner? Stumbling onto an article in a journal or newspaper that helps tackle a nagging problem? Creating a new drug by accident?

Serendipity, defined as the ability to recognize and leverage or create value from unexpected information, appears in all parts of life,¹ and especially in professional fields, including science and technology,² politics and economics,³ education administration,⁴ library and information science,⁵ career choice and development,⁶ and entrepreneurship and management.⁷ Interestingly, although scientists have moved from reluctant to open acknowledgement that serendipity is behind many an invention or discovery, few business scholars or managers have systematically studied or applied serendipity in any direct fashion. The topic, though, may be gaining more visibility and attention: a new book on luck, for example, looks at how individuals and organizations have turned good or bad luck into something of value ("return on luck").⁸

Thus, in this chapter, we seek to understand serendipity in a business context, examine what it could mean for management and strategy, and how it could be used in business. We divided the chapter into three

sections. First, we examine the concept of serendipity and its importance and then review literature about it, in terms of definitions, conditions that encourage or hinder serendipity at different levels (the level of the individual, the level of an organization, and external conditions), and the process of serendipity. Next, we propose a tentative framework that seeks to incorporate the literature and existing models, and which draws upon discussions with executives who have begun to track and analyze how they might use serendipity in their ongoing management practices. Finally, we close with suggestions for how to develop the notion of serendipity as a competitive advantage, both in practice and in research.

SERENDIPITY—WHY WORRY ABOUT IT?

In the early 1950s, two eminent medical researchers—Drs. Lewis Thomas from New York University and Aaron Kellner from Cornell University—separately noticed an unusual anomaly in their research labs: the ears of rabbits “flopped” when the animals received injections of the enzyme papain.⁹ Each researcher considered the phenomenon to be abnormal and dramatic, but for each of them at the time, not worth spending much energy on. They were both pursuing other research and this unexpected event did not peak their interests (or fit into their budgets) enough to follow up. The same phenomenon consistently occurred on subsequent occasions whenever they injected papain; again both researchers noticed it, but they did not pursue it.

But some years later, in 1955, when Lewis was showing the phenomenon to a group of medical students, he finally decided to follow up on why the rabbits’ ears flopped. At that time, he was able (more interest, time, and money) to pursue what had caused the odd result. When he at last studied what was happening, the pursuit resulted in research that was revolutionary, more significant than the research he had been pursuing when he initially noticed the “floppy ears.” The floppy-eared-rabbit research eventually led to a Nobel award. In contrast, the other researcher, Professor Kellner, never pursued the floppy-ears anomaly, as it did not fit into his research interest. Barber and Fox¹⁰ described what happened as “serendipity gained” (Thomas’s decision to look into the phenomenon) and “serendipity lost” (Kellner’s decision not to pursue it). The example offered a striking illustration of the potential benefit of investigating some unexpected information or discovery, as Thomas (finally) did.¹¹

More famous examples abound of unexpected scientific discoveries that have become lifesaving or revenue-generating products (e.g., penicillin, Velcro). Interestingly, and perhaps because the results are easier to measure, scientists have unabashedly accepted the value of looking for the unexpected or anomaly that may be more interesting than the expected findings.¹² In contrast, whereas most management scholars generally

ignore, at best, or scoff, at worst, the notion of serendipity as an ability to cultivate and use to organizational advantage, some management literature has begun to examine the concept. For instance, Brown¹³ argues that it could play a role in entrepreneurs' actions. Dew¹⁴ draws upon Sarasvathy¹⁵ to argue that "surprises are usually relegated to error terms in formal models. Instead . . . they *may be the source of opportunity for value creation*, but only if someone seizes upon them in an instrumental fashion and imaginatively combines them with . . . inputs to create new possibilities" (italics added). Interestingly, when questioned, many managers will say "it happens all the time," but are reluctant to admit basing major decisions or directions upon serendipity.

Yet, some business strategic moves may depend more on serendipity than managers or scholars have acknowledged in the past. Meyer and Skak¹⁶ studied the decisions of small- and medium-sized enterprises that were considering and/or moving into Eastern Europe. The networks that managers had developed sometimes offered "unanticipated opportunities by providing complementary resources, knowledge, or contacts." Given that the networks were outside of the firm's control, an important aspect was that the managers were open and ready to consider and then take advantage of the unexpected opportunities that arose. In particular, Meyer and Skak¹⁷ found that for small firms, such "elements of chance" could affect a firm's growth path and direction because of the networks, contacts, and opportunities that the managers could pursue as a result of those serendipitous events. When the small firms responded quickly, they could in some ways leverage such unexpected information better and faster than competitors.

Finally, Collins and Hansen,¹⁸ in describing the idea of "return on luck," note that events—good and bad—happen in any organization. The ability to take advantage of them, to execute an action that generates good value, has benefited some firms in major ways.^{19,20}

As the management literature increasingly begins to open to the possibility that serendipity may have value in business, perhaps the way Taleb²¹ and others have discussed it in relation to scientists could be applied to management: "successful scientists search for something they know but generally find something unexpected."²²

WHAT DO WE KNOW ABOUT SERENDIPITY?

Serendipity as a concept has been around for hundreds of years. Serendipity as a "studied" concept is rather recent. In this section, we review some of what has been examined and studied about several aspects of or affecting serendipity. First, we review definitions, characteristics and "types" of serendipity. Next, we look at the contextual factors influencing it, particularly at the organizational, individual, and external/environmental levels. Third, we examine literature that offers insight into how

serendipity happens, or the process that seems to occur once unexpected information appears. Finally, we review literature on the types of actions resulting from leverage serendipity.

Most discussions on definitions of “serendipity” start with some version of the story reported by Walpole (1754). Hundreds of years ago, a king named Giaffer educated his three sons to a level that nearly satisfied him, but felt they needed a bit more “seasoning” before assuming the duties of the throne. He sent them into the countryside of what was then called Serendip, later Ceylon, now Sri Lanka. In the course of their walks, they noticed and made observations about information they had not sought or expected, ranging from grass eaten and not, spit wads on one side of the road, bees and flies, and footprints. When they arrived at one town, a farmer asked if they had seen his lost camel.

“Is the camel blind in its right eye? Is it missing a tooth on the left side of its mouth? Is it lame in one leg? And is it carrying honey and sugar?”

The astounded farmer at once accused the three princes of stealing his camel and demanded that the emperor punish them. But the wise emperor asked first to hear the princes’ story.

“We noticed along the way that the grass on the left side of the road had been eaten, while the right side was still covered with fresh grass (so we assume the camel is blind in one eye). We saw wads of grass that had dropped onto the ground, through a hole where a tooth should be in the camel’s mouth. Bees like honey and flies like sugar, which the camel was carrying in packs on either side of its back and, as it swayed, must have left drops in the road. And finally, we noticed three footprints and a drag where a fourth would be, suggesting the camel was lame in one back leg.”

The princes’ notoriety came from their ability to notice unexpected information that they were not searching for and, later, turn it into something of value. At the time, their curiosity caused them to notice, but lacking context, they did not connect the various pieces of information. Once they had a context for understanding the unexpected information and a problem (the lost camel), they were able to connect the pieces of a puzzle and offer and explain how they knew about the camel.

Definitions

The Walpole story is useful, but often not useful enough for people who have tried to define serendipity over the years. In the management literature that has tackled the concept, typical characteristics that emerge include:

- Unsought, unexpected, unintentional, unanticipated event or information,²³
- Out of the ordinary, surprising, anomalous, inconsistent with existing thought, findings or theory,²⁴ and

- An alertness or capability to notice what others do not, to recognize, to consider, and to connect previously disparate or discreet pieces of information²⁵ to solve a problem or find an opportunity.

Unsought, Unexpected . . . Anomalous and Inconsistent with Existing Thought

The definitions range from being quite broad—unsought discoveries, unexpected events, or information—to being more specific and narrower in the nature of the event or information. In particular, the literature makes it clear that the unexpected information should be an “anomalous,” incongruous, or inconsistent discovery or finding, at odds with existing theory or ways of thinking.²⁶ Scientists, especially, appear to conscientiously seek the inconsistent or anomalous information or event because that forces review of existing theory and can, perhaps, lead to new directions with possible major payoffs.²⁷

In some cases, an individual may be searching for a new idea, problem, solution, or opportunity. In combinatorial chemistry, for instance, which often yields new drugs, the notion of “a blind search” is part of the process,²⁸ with “serendipity mistakes” just a likely stage in the experiment. Going down a blind alley in search of some answer but finding another one, then, is almost built into the research process itself.

Dew²⁹ describes serendipity as the intersection of three “domains” or elements: search, knowledge/preparation, and chance. He claims that an individual needs to be looking for something, such as a solution to a problem or an opportunity. She needs to approach the search with existing knowledge and preparation so that she will be able to recognize an event or information. In addition, the unexpected event or information has to emerge by chance. Thus, according to Dew,³⁰ serendipity occurs only when all three elements are present and overlap (a search, prior knowledge, and chance event).

Yet, if we return to the three princes of Serendip story (or to the floppy-eared-rabbit story, for that matter), perhaps the search can come “after” the information appears. In their case, it seems that two of Dew’s³¹ three conditions existed on the part of the princes—prior knowledge and preparation and the chance occurrence of unexpected information (e.g., the grass eaten on one side of the road, the footprints, and rut in the sand). The princes—and often scientists—were not “looking for something,” but rather were able to solve a problem once they were presented with it, not because they were seeking information to solve it.

An Alertness or Capability

Finally, a group of researchers note that the ability to notice or be aware of unexpected information is critical. De Rond³² talks of scientific

discovery as beginning with the “awareness of anomaly and unsought factors.” Van Andel³³ defines serendipity as the experience of observing an unanticipated, anomalous, and strategic piece of data, which then allows for developing new theories or expanding existing ones.

Other definitions focus on the capacity or ability to see and leverage unsought information or discovery. In other words, serendipity is not just the unexpected information or event but rather the ability to recognize and do something with it. Specifically, it is an individual’s or organization’s ability to recognize and capitalize upon an unexpected event or information and turn it into something that adds value for the organization—or, in the case of scientists, the research community.³⁴

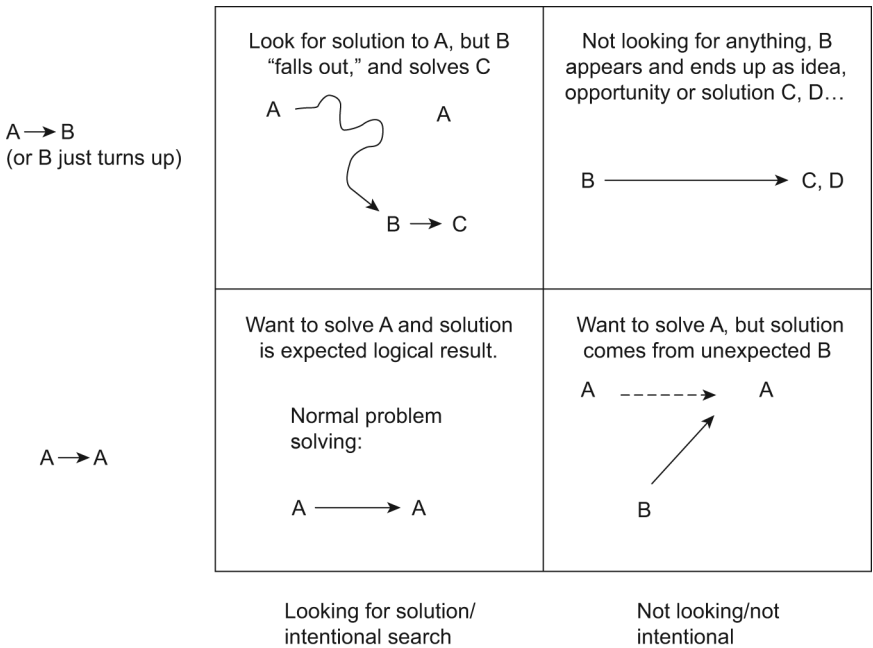
Characteristics and “Types”

For scholars, scientists, and practicing managers, serendipity can appear in several “types,” depending partly upon whether there is a search “intent” and whether the unexpected information solves some problem or opens the door to new problems/opportunities. In particular, several researchers use a 2 by 2 matrix to clarify these options. Essentially, they break serendipity into two categories: (1) whether there is explicit intent to find something or a search exists to solve a problem or find an opportunity,³⁵ and (2) whether unexpected information solves an existing problem or reveals solutions to unknown problems or opportunities.³⁶ (*Note:* A situation where there is an intent and a solution to the problem at hand is a traditional problem-solving (A to B) situation, not serendipity.) Thus, this generates three types of serendipity, illustrated in Figure 8.1.

Type 1

First, the most common type of serendipity is when an individual seeks a solution to problem A and it does not come from “expected” sources, but rather from an unexpected event or piece of information, (B). For instance, when researchers sought an explanation for obesity, initial assumptions were that physiological or economic reasons were base causes; individuals had genetic tendencies toward obesity or they purchased cheaper food, which tended to be higher in fat content. In fact, two researchers studying data from a small town in Massachusetts found another unexpected explanation, from a completely different direction. Put simply, they found that “your friends can affect your health.” People who are overweight tend to associate with others who are overweight, as do smokers with other smokers. Christakis and Fowler³⁷ argue that social networks and friendships may influence health, which was a completely unexpected explanation or solution to the initial problem of obesity.

Figure 8.1
Types of Serendipity



Note. Modified from M. De Rond, 2005, “The Structure of Serendipity,” Cambridge Judge Business School Working Paper.

Type II

Type II serendipity happens when an individual searches for a solution to problem A, but rather than finding a solution to A, uncovers something unexpected and unsought (B). Well-known examples of Type II serendipity include the floppy-eared rabbits we mentioned previously, as well as penicillin and Post-It notes. Fleming was not looking for penicillin, but accidentally discovered a “mold” in his lab that of course had many implications and uses. For Post-It notes, a 3M researcher was trying to create a glue that would stick well and instead, accidentally discovered one that did not stick so well, but then uncovered many uses for the newly discovered product.

Type III

The story of the three princes of Serendip reflects a final and, as some might say, the truest form of serendipity. This occurs when a chance or

unexpected event or piece of information appears, and an individual then begins to think about what it might mean, and along the way, solves a problem or discovers a new opportunity he or she had not intended or thought of previously. In this case, no intent or overt searching happens, but to gain the benefits of the unexpected event, the individual must still have knowledge and a prepared mind to notice and then realize its potential value. The legend of the apple falling on Newton's head—combined with his knowledge of science—led to his serendipitous discovery of gravity's properties. Likewise, the also now famous story of the invention of Velcro: a man who found insistently sticky burrs on his dog was led to wonder whether there might be anything of value that could be made from such an unexpected bit of information.

In Type III serendipity, some scholars insist that there must also be a "metaphorical leap" to uncover a possible value or use in the information or event. In Newton's case, a falling apple came to represent gravity's pull on any object; the "burrs on the dog" could be extrapolated to "some sort of material that holds tight."

CONTEXT FOR SERENDIPITY

It is not just the merit of the discovery that counts per se but also the context in which it emerges.³⁸

If a tree falls in the forest and no one hears it, does it make a sound? If an unexpected and unsought event happens and no one notices, did it really happen? Context is critical for serendipity. In the floppy-eared-rabbit example, one scientist did not and one (finally) did pursue an unexpected observation, yielding major research implications for the one who did. The key is that both researchers *noticed* the unusual event. Thus, for unexpected information to be of any potential value, it has to be noticed.

The scholarly literature suggests that two factors influence the possibility of unexpected information being noticed and leveraged. Those factors exist at two levels: the organization and the individual. Most literature relating to organizational context refers to how culture can enhance (or hinder) the chances of serendipity occurring. At the individual level, the literature discusses characteristics and traits that individuals need to have or acquire to take advantage of serendipity. We briefly review each of the context factors further on.

Enhancing Organizational Serendipity

By far, the most important aspect at the organizational level for enhancing the chance that serendipity will be leveraged is organizational culture.³⁹ At least four elements of culture emerge often as being important for increasing and facilitating serendipity.⁴⁰

First, the notion of finding ways to help dissimilar individuals interact with one another is critical, especially when they come from different disciplines.⁴¹ As the book *The Power of Pull* suggests, if knowledge is dispersed,⁴² it is harder to find desired information with a formal search; rather, it is more likely that individuals will “discover something useful through a chance encounter.” That requires infrastructure—both physical but also cultural—to encourage those encounters. Cunha et al.⁴³ talk of the need for “free flow of information” through different types of social networks, such as when smokers meet outside a building. (One must wonder, as smoking disappears, what interesting ideas and social networks have also disappeared). When people come from diverse units and hierarchical levels, the opportunities for exploring the “periphery” of some field or discipline can grow, and that unexpected information and chance for exchange is high.

Following closely along with the importance of diverse groups that interact is the need for trust, willingness to share knowledge, and social capital within an organization.⁴⁴ In a culture that allows risk taking, withholding of blame, and openness to a range of ideas, the likelihood is greater that serendipitous events will be noticed and considered. Only then can they be leveraged or used to an advantage. If a culture thwarts open discussion or some amount of “directionless activity,”⁴⁵ the chance for gaining value from serendipity disappears.

Third, in addition to encouraging opportunities for cross-discipline exchanges and trust to happen, the literature suggests that an organizational culture needs to tolerate a degree of autonomy for experiments,⁴⁶ “controlled sloppiness,”⁴⁷ and minimal structure.⁴⁸ When some amount of inefficiency, dissent, and failure are allowed to occur, unintentional events may happen, which may in turn generate ideas, opportunities, or solutions to problems.

Fourth, for members of an organization to actively look for serendipity in their fields, it has to be perceived as relevant and important for that organization.⁴⁹ The value of noticing unexpected information needs to be built into the institutional routine, and then, when some information has been recognized, it needs to be leveraged and implemented. As that cycle occurs and individuals see the results, the notion of serendipity gains credibility and legitimacy. That allows the organization to focus on hiring or developing people with a “serendipity disposition,” with diverse search styles (looking for unexpected events), peripheral vision, and “weirdness.”⁵⁰

Obstructing Organizational Serendipity

The factors within organizations that encourage serendipity can, of course, hinder its likelihood if they are lacking.⁵¹ Without openness and trust, the chance of self-censorship increases and individuals will be less

alert to unexpected information. If power comes into play in deciding who “owns” a great idea, or if vested interests dominate within an organization, ideas or observations could be “interrupted” or quashed somewhere in the organizational hierarchy, making it improbable that ideas and the opportunity to leverage unexpected information will emerge in the future. If the organization does not value or allow a certain amount of experimenting or sloppiness, a discovery may be recast as one that was rational, leading to potential loss of other discoveries in the future. Finally, if the right people do not support the process and notion of serendipitous events having possible value, they certainly will go unnoticed.

ABILITIES NEEDED TO BE ABLE TO RECOGNIZE AND TAKE ADVANTAGE OF SERENDIPITY

Chance is an event, serendipity is a capability.⁵²

In “the science of serendipity, luck can be ‘caught,’ corralled, coached, and created.”⁵³ For organizational leaders to leverage unexpected information, the capability of doing so must exist. This is the arena where education, training, and building of skills are most likely and most promising. Scientists training students routinely discuss the importance of looking for unexpected findings, following paths that peak curiosity and may (or may not) have potential payoff.⁵⁴ In this section, we discuss the broad categories of skills that individuals need so they may develop the ability to notice and take advantage of unsought information or events. The skills fall roughly into three broad groupings: general characteristics, those relating to openness and curiosity, and those relating to preparedness and alertness, including stage of development. Finally, we close the section with a review of the types of obstacles that can thwart the capability of serendipity.

General Characteristics

The literature suggests that individuals who possess several fundamental characteristics are more likely to be able to see and pursue serendipitous events. Four broad groups of characteristics or skills come through: (1) motivation to work hard and perform well; (2) a social network used effectively; (3) willingness to take risks; and (4) a good “grip on reality” in terms of what is possible or not in the marketplace.

First, regardless of the literature discipline—whether education, career development, or business—the research focuses on characteristics that start with the most basic, including intelligence and competence, a strong work ethic, persistence, diligence, and motivation to succeed.⁵⁵ Next, the literature suggests that individuals who more often benefit from

serendipity have strong and diverse social networks,⁵⁶ which matches with the need for a culture that encourages cross-discipline interactions. Third, a willingness to take risks and pursue untested ideas is critical for creative ventures of any sort, and particularly with regard to unexpected events or information.⁵⁷

Finally, and again critical for any endeavor where evaluation of unexpected events is necessary, it is an ability to assess “realities.” In examining differences between alert and nonalert people who noticed events in the marketplace, Gaglio and Katz⁵⁸ supported Kirzner’s⁵⁹ alertness principle in their findings that “shrewd and wise assessment of the realities” helped to encourage flashes of insights, which in turn led to identification of market opportunities. Such a grip on reality⁶⁰ enhances the likelihood that an individual will notice (by being alert) and be able to assess the information or event for its possible value.

Openness and Curiosity

As we reported in the commonly told story about the three princes of Serendip, one of their foremost qualities was simple curiosity and the ability to notice.⁶¹ They were open to what they found out later were clues to a lost camel, which they had no knowledge of at the time they made their observations along the way. They simply noticed because they were curious.⁶²

Such openness to unsought events and information has been noted in career development, even to the point where Williams et al.⁶³ suggest that women are more open to serendipity in their careers than men. In addition, Van Andel⁶⁴ includes openness and curiosity as critical factors in people who “find” serendipity. Often the curiosity is coupled with a willingness to look for the surprise or the anomaly in a situation.⁶⁵ Such counterfactual thinking becomes useful later in assessment of the information or event as well.

Preparedness and Alertness

Was there ever a more trite saying than the often repeated comment attributed to Louis Pasteur: “chance favors the prepared mind”⁶⁶? Yet, if this holds, then training, reading, and experience could help foster serendipity. And indeed, one of the most frequently mentioned characteristics needed for taking advantage of serendipity is the notion of being ready and prepared.⁶⁷ Kirzner⁶⁸ defined alertness as being able to notice an event without searching for it and in the process identifying opportunities that had been overlooked. Cunha et al.⁶⁹ note that serendipity thrives on alertness and as a result depends upon mindfulness.⁷⁰ The opposite, an unprepared mind, discards the unusual observation and hence loses the chance for leverage.⁷¹

But simply being alert or prepared may not be enough. In a study of corporate executives and new venture managers, Busenitz⁷² found that inexperienced founders of firms were intense and alert in their search for information—unexpected and otherwise—but that they were less focused in how they searched, and sometimes let curiosity take them further afield (and wasted time) more than the experienced managers did. In other words, they were open, but perhaps not prepared or alert in the right manner.

Closely tied to being prepared and alert is, for some individuals, the stage of their own development, whether that is in careers, knowledge base, or personal lives.⁷³ For instance, Betsworth and Hansen⁷⁴ found that factors both personal and professional influenced the degree to which, and direction that, serendipitous events played in the lives of college graduates. Gaglio and Katz,⁷⁵ as we mentioned previously, found that experience (i.e., later stage of career or profession) factors into the ability of new venture founders to notice and take advantage of serendipity.

Finally, the two medical researchers who noticed the floppy ears in rabbits (Lewis and Kellner) were well-established scientists, with solid reputations, and thus at stages of their careers where they could, if they desired, be more able or willing to take risks by following a path that could have led to nothing. Of course, Lewis did not pursue the anomaly until several factors contributed to his being ready to look at the question. He pursued the floppy-ears question only later, when he had more resources (rabbits to test), when he was frustrated with his other research (which had hit a snag, so he was looking for new areas to pursue), and when he was, as he put it bluntly, “showing off” a bit to his students. At that point, Thomas realized he should be doing a more systematic comparison of injected and noninjected rabbits.⁷⁶ Thus, his stage of career and stage of research projects influenced his readiness to look into the rabbit ears.

Obstacles

As we noted at the start of this section, sometimes “serendipity lost” wins the day. Several obstacles can impede serendipity. In fact, one could wonder how it ever occurs! The obstacles range from a culture (discussed earlier) that neither encourages nor celebrates the ability to notice and take advantage of unexpected information, to individual inability or unwillingness to be open, courageous, and timely about what events or information might be of value. Barber and Fox’s⁷⁷ comparison of the medical researchers identified distraction (with other projects) and lack of resources (not enough rabbits to test) as obstacles to Lewis and Kellner pursuing the unusual observation when they both first noticed it.

But perhaps even more important and more devious are the preconceptions, expectations, and convictions that those researchers held, as do

others, when they encountered an unexpected or unsought finding.⁷⁸ Essentially, once expectations and assumptions are set, it becomes hard to see something differently. In the rabbit ears' cases, each scientist had a research focus in an area unrelated to cartilage (which is finally where Lewis realized the impact of the enzyme). One focused on proteins, the other on muscles, and as a result, when the out-of-the-norm observation occurred, and did *not* fit within their frameworks of how to evaluate it, they could not explain it (and refrained from pursuing it any further). Thus, a very large obstacle, which ties back to the willingness to be open, is preconceived notions of the meaning of some observation.

HOW DOES SERENDIPITY HAPPEN?

How does the act of serendipity occur? What happens when individuals—or organizations—leverage serendipitous information or events? Is there a process or framework to help us understand it, follow it, shape it, or learn it?

In this section, we review three frameworks from the business management literature (although one comes from information technology) that suggest stages or steps in a process of understanding and using serendipitous events or information. Although 50–60 years ago it was not common, the science disciplines today, as we have suggested earlier, more readily acknowledge that serendipity is a normal part of operations. In contrast, Cunha et al.⁷⁹ note that even now, few management scholars explicitly research serendipity in organizations.

The frameworks have in common the notions of some sort of precipitating conditions or situation, whether at the level of the individual,⁸⁰ the organization,⁸¹ or the external environmental level.⁸² They also comprise the need for an individual to *notice* an unusual event or anomaly, to *recognize* there might be some possible value, and to *connect seemingly disparate ideas or data* (also known as “connecting the dots”), which some scholars refer to as “bisociation.”⁸³ This stage refers to the ability to identify “matching pairs” of events that are meaningful, and which may be, but are not necessarily, causally related.⁸⁴ Finally, the frameworks generally include some type of evaluation and resulting action that emerges from the process.⁸⁵ We describe the three frameworks in more depth further on.

Looking for A but Finding B

Mendoca et al.⁸⁶ and Cunha et al.⁸⁷ focus on what we might call Type II serendipity, where an individual searches for a solution to problem A, but in the process, discovers something quite unexpected, a solution for a completely different problem B. The framework has four major variables: (1) precipitating conditions, or those that will encourage or hinder

likelihood of serendipity occurring; (2) the process of searching for a solution to problem A, including how organizational members go about the search, and how open and focused they are; (3) bisociation, or the ability to connect information, improvise, or make do with what is available to solve problems; and (4) reaching an unexpected solution for a different problem, including how open the organization and individuals are to ambiguity and imperfection.

Stages

Two other frameworks⁸⁸ are stage models that focus more on the acts of noticing or recognizing an unsought or unexpected event or information. Consultants Lawley and Tompkins⁸⁹ propose a very straightforward framework that argues for the importance of preparation (E minus 1), before some unexpected event (E), and the steps that follow (called E + 1, E + 2, and so on): recognition, choosing an action, and understanding its consequences. These steps may be iterative and happen repeatedly over time before the final evaluation and assessment of the outcome is clear.

A second stage model comes from Gaglio and Katz.⁹⁰ They focus especially on the impact of unexpected events in terms of their likelihood to lead to moderate or innovative opportunities. They offer a series of steps that an individual would experience, where several types of evaluation occur. First, an individual determines whether an event is normal and expected, or unusual and unexpected. For the "normal event," typically the individual and organization will continue with its status quo plans and operations, and the event then will very likely yield small or imitative new opportunities, if any. If the event is unexpected, then a first assessment determines whether to ignore, discount, or pursue it. If the organization chooses to ignore or discount the event, then the outcome is similar to what occurs with a normal, expected event: following the status quo. If an unusual event that is noticed and then assessed, subsequent stages include trying to understand what it means for the industry, society, or market, and then trying to explain it and put into the organization's context. This happens through what Gaglio and Katz⁹¹ call "counterfactual thinking" and "mental simulation," or trying to sense whether the event is analogous to something already experienced. From that analysis may come a big breakthrough that would lead to innovative or quite different opportunities.

For all three frameworks, the final outcome or action likewise tends to be something that is unexpected or unsought.⁹² Those could be, for example, finding a solution to a different problem, discovering a new solution to an existing problem, or identifying a new opportunity (that ultimately will save or make money).

DEVELOPING A TENTATIVE FRAMEWORK FOR SERENDIPITY

Our tentative framework for the serendipity process incorporates many ideas from existing models and adds a few twists. Some of the “twists” emerged from attempts to apply “serendipity as a competitive advantage” within a sample business firm. Recently the former CEO of a manufacturing firm, Randy Hales, raised the question in his senior management group of whether the organization could develop serendipity as a capability and leverage it to their competitive advantage. The firm, Mity-Lite, based in Salt Lake City, Utah, produces high-quality office furniture—chairs and tables—for use worldwide. The initial reaction by the top executives was, not surprisingly, skepticism. Yet the executive suggested that the managers experiment (curiosity and openness!), spend 30 minutes every two weeks to identify unexpected information, how they noticed and evaluated it, and then decide what, if any, actions they might take to leverage it. That very small experiment, in addition to existing research and literature, helped us shape a tentative framework, presented further on. We begin with a definition and its elements and follow with the framework itself.

Definition

The definition of serendipity that we use is the *ability to recognize and evaluate unexpected information* and generate *unintended value* from it. Four aspects in the definition are critical to dissect: (1) the ability; (2) to recognize and evaluate; (3) unexpected information; and (4) generate unintended value.

Ability

First, serendipity as a *capability* more closely mirrors others’ definitions that it is an alertness or capability to notice what others do not.⁹³ It is not a “happy accident” or an unanticipated discovery. Those are data points, events, or pieces of information that exist, whether or not they are noticed. But data points, facts, or information on their own are worthless without the action or ability to leverage them. Thus, our definition of serendipity supports others in its focus more on the *action taken as a result of observing* or uncovering information, rather than simply on the discovery or event or piece of information itself.

Recognize and Evaluate

The ability *to recognize and evaluate* comprises several pieces. First, recognizing includes two critical acts: noticing and connecting information.

The three princes of Serendip observed or noticed bees circling droplets of honey, grass that had been eaten on one side of the road, and three hoof prints and one groove in the sand. Those bits of information, noticed and filed away then, became important only later, within a context of the problem of a lost camel. In a sense, the bits of information were “clues” that they did not realize were “clues.” Only within that context of a problem did the princes *connect* the disparate pieces of unexpected information, and put those clues together.

After noticing or observing comes evaluation of information. The ability to *evaluate* encompasses both “flash evaluation” and more systematic evaluation in pursuit of creating value. Flash evaluation starts with a “gut feel” that moves toward fuller alertness, which in turn can go to a more systematic evaluation that confirms the initial gut feel. The reliance on information—whether from internal (personal or organizational) or external (environmental) sources—may vary, however, and we discuss that in more depth further on.

Unexpected Information

Serendipity assumes the appearance of some type of information that is unanticipated, unexpected, unplanned, or unsought.⁹⁴ In a sense, it is the reverse of what happens during the insight experience. Insight occurs typically after a conscious search for (and then sometimes and unconscious mulling of) information to learn or a problem to solve. During the time we wrestle with the problem, or try to learn a new concept, we must assertively put forth effort and work, absorb information and sort it, before the insight occurs. Thus, in the case of encouraging insight or aha moments, we assertively pursue information.

Serendipity, on the other hand, begins more passively. It does not necessarily presume any “work” or attempt to solve a problem, other than noticing and having a prepared mind. It *can* include a search (Type I serendipity that we discussed earlier in this chapter), but it does not require it (Types II and III). Rather, it contains the notion of unexpected information appearing, even when there is no immediate problem to solve. Information could be data, an event, or an observation or clue. Again, to refer to the three princes, they came across unsought, unexpected, and unplanned information or clues. They made note, but did nothing with the information until they encountered a context—problem—which allowed them to connect disparate clues or pieces of information into something of (unintended) value.

Unintended Value

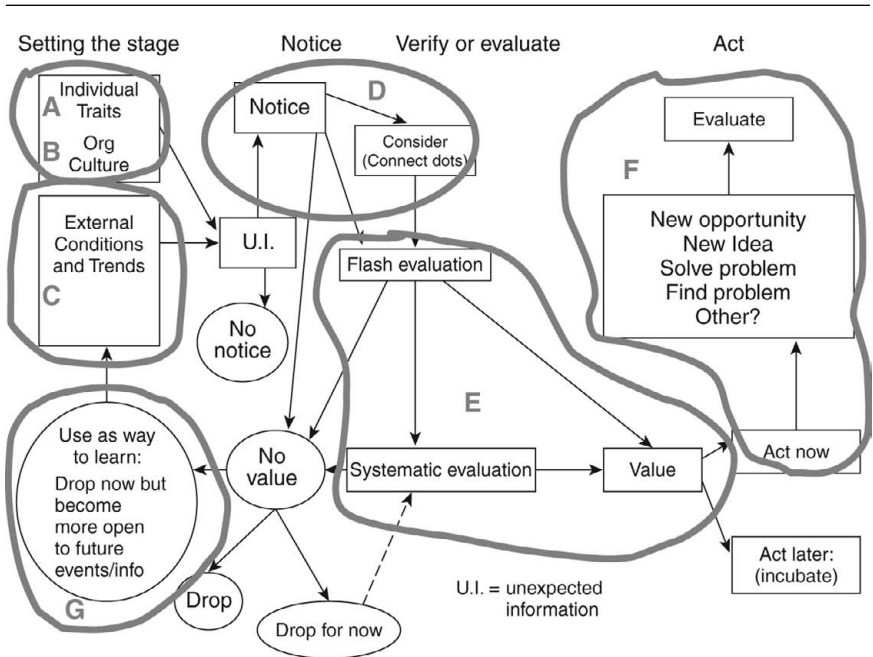
Finally, the serendipitous experience includes the element of *creating unintended value*, which refers to the potential outcome of a problem

solution, new opportunity, idea, or other direction that was unintended. In other words, serendipity implies the lack of intension to solve a particular problem or find a particular opportunity. Rather it suggests the ability to take unexpected information and create value that, before the information appeared, would not have happened.

Tentative Framework

The tentative framework (Figure 8.2) offers a process that individuals appear to follow as they apply the ability to recognize, evaluate, and create value from unexpected information. The model has many steps, but we have clustered them into four broad stages, with subparts in some. The four stages include: (1) setting the stage or conditions that will increase the likelihood that unexpected information will be noticed (A, B, C, and G); (2) noticing unexpected information and beginning to connect it to other information (D); (3) evaluating the information—flash evaluation and, sometimes, more systematic evaluation—in terms of whether it could create unintended value (E); and (4) taking action upon the information to generate that value (F).

Figure 8.2
Tentative Framework of Serendipity Process



Setting the Stage (A, B, C, and . . . G)

The model suggests that conditions at three levels may enhance the likelihood of unexpected information being noticed. First, the characteristics or conditions of an individual (A) that will make her more or less likely to notice anomalous information (e.g., openness, confidence, curiosity, alertness) are ones that many scholars have covered.⁹⁵ Organizational culture (B), including an openness to new ideas, a cross-discipline mix of people, and an allowance for “sloppiness,” are similarly ones that research has addressed.⁹⁶

Finally, external conditions (C) have been less widely considered and yet could well be more important for different types of settings or industries.⁹⁷ In the case of the Mity-Lite executives, once they agreed to try and “track” unexpected information and analyze how they could deal with it, the openness in their culture and willingness to notice unexpected information was critical for them to generate potential future value. As they became assertively alert to unexpected information, they began to see or find information that they may have dismissed or not noticed before they began their tracking exercise.

For example, in one case, the executives were launching a new product and had market analysis in preparation. In the process, they uncovered unexpected information that suggested their pricing methodology was inaccurate. Because they had been alerted to the notion of unexpected information and were looking for ways to recognize and leverage whatever they might find, they did notice unexpected information about their pricing methodology, and evaluated and acted upon it. In the discussion about their experience, they claimed that because they had been alerted to the notion of unexpected information, they were more receptive to noticing and otherwise might have missed it without those “conditions” being favorable to noticing.

Interestingly, even when information is seen to be of “no value,” the simple act of noticing and recognizing possibilities may in turn enhance the openness for setting the stage for future noticing (G). Thus, the act of noticing and considering and then doing a flash evaluation may heighten awareness and increase alertness for more unexpected information later.

Noticing and “Connecting” Unexpected Information (D)

The process of noticing or being alert to unexpected information⁹⁸ and then beginning to connect or “bisociate”⁹⁹ unexpected bits of information is one of the most critical steps in the serendipity process and framework. Gaglio and Katz¹⁰⁰ call this the “What’s going on?” step, which involves noticing an unusual piece of information and then beginning to wonder (and follow through) what it might mean. Critical in this phase, of course, is the willingness to pursue the anomaly.¹⁰¹

The Mity-Lite executive team offered several examples of unexpected information that they connected that led to new directions, some more strategic than others. One example involved a former employee who had left the firm to gain expertise in a very different area than his previous job. He joined another organization and realized he missed working at the manufacturing firm; so he contacted the head of operations saying that he would like to return to the firm, and was willing to go back to his former job. Simultaneously, the operations executive had been considering the question of how to help the firm develop and move into the very expertise arena that the former employee had developed while he was away from the firm. The executive had decided that he had no option but to develop an internal candidate since finding an external candidate was deemed likely to be too difficult and costly. Then, boom! Unexpected information (the former employee with the desired expertise) calls. His re-emergence thus solved a problem from an unexpected direction (Type I serendipity).

Evaluating—Flash and Systematic (E)

The evaluation stages comprise both flash evaluation and more systematic evaluation.

Flash Evaluation. Initially, and coupled with the early connecting of information bits is a flash evaluation, in which an individual does a quick, almost gut feel assessment of the unusual information. The manufacturing executives refer to this as using their “experienced eyes” to assess quickly some unexpected information. That initial gut feel then may lead the individual to become more alert to whether there are ways to connect the observed information to other already known information, both internal and external.

More Systematic Evaluation. A more systematic evaluation would include analytical assessment that leads toward a clearer confirmation of the information’s possible value. That process of assessing unexpected information for potential value is affected by factors such as risk tolerance, level of uncertainty surrounding the information and evaluation, timing, and finding additional information that will help confirm or dispute the initial unexpected information. Depending upon how evaluators/decision makers take those factors into account when assessing unexpected information may lead to better or worse outcomes.

The systematic evaluation part of the model has three critical elements: (1) the distance between perceived or anticipated *opportunity* from the unexpected information and the *reliability of the evaluation* of the unexpected information (in the middle), (2) the general *evaluation process* from “gut feel” to a firmer belief about the evaluation, and (3) the *factors* that may influence the process of evaluation. Those elements also determine the

extent to which the information used in making decisions is weighted internally or externally.

The result of evaluation could take on at least three outcomes or decisions of whether to pursue an opportunity. First, when the unexpected information is evaluated in the context of both internal and external factors, when the evaluator/decision makers are not “swayed” too strongly by any of those sources, the evaluation is “balanced” and the outcome may well be an opportunity that the decision maker leverages when competitors do not.

In the second situation, the decision maker notices unexpected information but mostly because others point it out and suggest that there is a way to leverage it. The decision maker then essentially follows the herd to try and take advantage of the unusual information, resulting in what might be called a “herd” outcome. In this case, there is no competitive advantage to the organization because a herd of organizations is trying to leverage the information.

Finally, internal decision makers may be pressured from sources, such as government policy makers (e.g., Vietnam’s Ministry of Finance or the U.S. Treasury during the financial crisis) to act. In this case, the organization may act on unexpected information without thoroughly considering external factors or repercussions. During the 2008 financial crisis, for example, large U.S. banks were forced to take sell toxic assets to the U.S. government, which affected their leverage ratios; most ultimately and quickly repaid the money. Unexpected information, evaluated “for them,” and the outcome was not necessarily in their favor. This “do it my way” approach is less common but does exist.

Creating Unintended Value (F)

The ability to recognize and evaluate unexpected information is not valuable in itself. To be a competitive advantage, the assessment must yield value and action: the unintended value is thus a critical part of the process. Whether it results in solving an existing or not-yet-tackled problem, finding an opportunity, or generating new ideas for future use, the use of serendipity (as an ability) must be that individuals and the organization as a whole can leverage it to create value. The manufacturing firm executives, for example, realized that by responding to a request for just one sample product, they ended up with an “unexpected customer” that could become major part of the firm’s business. Since the orders (and revenue) were not anticipated in the current fiscal year plan, the firm has decided to incur premium labor (overtime) to fill the demand, with the expectation later of increasing the price point for the products. Unexpected information/request created an initial problem (finding a way to fill orders), but ultimately became an opportunity.

WHAT NEXT?

The reaction of managers to the idea of “watching for” serendipity has been mixed—most say they understand the concept immediately, once they move beyond initial skepticism or even outright laughter (“how can you use something so unpredictable?”). Others say, “of course, it happens all the time.” Some have embraced the idea of actively being open to serendipity and looking for ways to use it. As we mentioned, one firm’s senior executives who began to track unexpected information and notice how, if at all, it could take advantage of it, found at least six cases of “serendipity gained” during their first two months of looking for it. As they described the incidents, it became clear that they experienced what they referred to as different types (i.e., people and process based), but they also experienced all three forms of serendipity: Type I (looking for a solution to A but finding a solution from an unexpected source); Type II (looking for a solution to problem A but discovering something completely unexpected that, in turn, led to an opportunity and solution to an, as yet, unidentified problem); and Type III (finding something unexpected and unsought that later turned into an idea for an improved product). Although the executives did not categorize the events as being “different types of serendipity,” they recognized the value of noticing and being aware of unexpected information, whereas they had not before their CEO presented the idea to them. As they have begun to calculate the economic impact, their skepticism about the rather fuzzy notion has dissipated.

This small example of the application and use of serendipity, or the ability to notice, evaluate, and create value from unexpected information, is a first step for both managers and scholars to learn more about it. As organizations seek new ways to improve performance, and as the existing techniques (e.g., lean manufacturing) become widespread, firms will look for avenues that are less tapped and more difficult to execute well, such as using creativity and innovation, insight, and serendipity. Being an early tester, if not an early adapter, may help some of them move into the lead.

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