

Seeking serendipity: The art of finding the unsought in professional music

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### Abstract

Serendipity is a valuable constituent of professional work. In order to ‘control’ the phenomenon it is important to gain insight in its processes and influencing factors. This study examined two cases of serendipitous information behavior in professional improvised music, a domain often associated with unpredictability. The aim of the study was to validate McCay-Peet and Toms’ latest model on work-related serendipitous experiences. The study followed a semi-structured interview procedure that consisted of three one-hour interview sessions to select cases and collect data. Results show that our data fit the model. Process elements like ‘trigger’, ‘connection’, ‘valuable outcome’, ‘unexpected thread’, and ‘perception of serendipity’ were identified, as well as factors such as ‘trigger-rich’, ‘openness’, and ‘prepared mind’. We also identified other factors (i.e., ‘curiosity’, ‘interest’, and ‘initiative’) that might influence serendipitous discovery. Additional (multi) case studies are necessary to generalize findings.

*Keywords:* information behavior, information seeking, serendipity, music

### Seeking Serendipity: The Art of Finding the Unsought in Professional Music

Serendipity is a relatively young concept that is increasingly used in formal and informal communication (Merton & Barber, 2004, Van Andel, 1994). From its inception until now, different meanings have been assigned to it, making it a somewhat fuzzy concept (McBirnie, 2008; McCay-Peet, 2013; McCay-Peet & Toms, 2015). Originally, serendipity refers to the act of "... making discoveries, by accidents and sagacity, of things [someone is] not in quest of ..." (Merton & Barber, 2004, p. 2). This description emphasizes chance and unpredictability, as well as perceptiveness and knowledge as important constituents of the discovery made. Recent definitions have added certain 'qualities' to conditions, processes, and products of serendipitous discovery. 'Pleasant surprise', 'fortunate happenstance', and 'happy discovery' for instance stress positivity in serendipitous outcomes ("Serendipity," n.d.). Further, additives like 'prepared mind' (Van Andel, 1994) and 'gift' (McBirnie, 2008) underline the importance of ability as prerequisite to notice serendipity. Well-known examples of highly significant serendipitous discoveries by gifted professionals are Post-it, X-rays, aspartame, and penicillin. In general terms these examples can be categorized as "finding B, when looking for A." This 'quality-free', simplified rule of serendipitous behavior applies for many situations in daily and professional life. Most of us will probably recognize this rule when the Internet is purposefully searched for information. For instance, it is not unusual that during a work-related, goal-directed search in Google the search engine results page (SERP) presents to you one or more references to sources not relevant to the search at hand but valuable for solving other (latent) professional problems.

Serendipitous discovery seems to have a positive effect on individual, group, communal, and societal well-being and functioning (McCay-Peet, 2013; McCay-Peet & Toms, 2015). It also has a strong link to innovation and creativity, two highly valued features of contemporary work

(Diaz de Chumaceiro, 1997; McCay-Peet & Toms, 2015). Consequently, it probably goes without saying that it is important to understand serendipitous processes and products as well as the factors that influence them. Initial research on serendipity mainly focused on identifying and categorizing examples of serendipity and distinguish so-called serendipity patterns (see Merton & Barber, 2004; Van Andel, 1994). The emphasis in current research is much more on revealing conditions for serendipity and disentangling serendipitous processes. Results of this line of research are often models that go beyond insight into processes; these models aim to help control serendipity too, a seemingly paradoxical situation (McBirnie, 2008).

A promising contemporary ‘serendipity model’ has been constructed by McCay-Peet and Toms (2015). Their model consolidates previous models of serendipity and explains serendipity broadly, in a professional, work-related context. Interestingly, their definition of serendipity resembles the original ‘neutral’ definition, saying that it is “[a]n unexpected experience prompted by an individual’s valuable interaction with ideas, information, objects, or phenomena.” (p. 1474). McCay-Peet and Toms analyzed 15 examples of serendipity in depth to construct the model. However, in order to become robust, it is important to validate the model in various contexts (Yin, 2014). Our study contributes to ‘model robustness’ and examines work-related examples of serendipity in the domain of professional improvised music making. We chose this domain as it is often associated with unpredictable outcomes and processes prone to risk, (happy) accident, and surprise (McBirnie, 2008; Wopereis & Derix, 2016; Wopereis, Stoyanov, Kirschner, & Van Merriënboer, 2013). The study specifically aimed to find examples of serendipity in music information (seeking) behavior (see Lavranos, Kostagiolas, Martzoukou, & Papadatos, 2015). Before we expand on the study’s research questions, we first briefly

summarize McCay-Peet and Toms' serendipity model. Table 1 provides summary definitions of the model's constituents; Figure 1 shows how these constituents relate to each other.

McCay-Peet and Toms' model consist of seven elements (see Table 1, E1–E7). According to their model a serendipitous experience starts with a trigger (E1), connects –after a possible delay (E2)– trigger and the individual's knowledge base (E3), leads to a follow-up action (E4) that, in turn, results into a valuable outcome (E5). Within one or more of these 'steps' the individual experiences unexpectedness (E6). Finally, the individual perceives the situation as serendipitous (E7). Since valuable outcome and perception of serendipity can occur before the follow-up has been ended, the latter is 'faded' in the figure. The model of McCay-Peet and Toms also identifies factors that may facilitate the process of serendipity. These factors can refer to interactions the individual has with the environment, labeled in Table 1 as 'external' (F-Ex) or describe features of the individual only, labeled in the same table as 'internal' (F-In).

Figure 1 shows how the seven elements (E1–E7) of an serendipitous experience are intertwined in time. It furthers emphasizes that several external (F1-Ex to F4-Ex) and internal factors (F5-In to F7-In) influence these elements.

The aim of our study was to validate McCay and Toms' model of serendipity in the domain of professional improvised music. However, we were also curious about the relationship between serendipity and creativity, and more specifically between serendipity and improvisation, a salient instance of musical creativity (Wopereis & Derix, 2016; Wopereis et al., 2013). Therefore, we started the research discussing contemporary definitions of serendipity (McCay-Peet & Toms, 2015; Merton & Barber, 2004; Van Anandel, 1994) and relating it to improvisation. After this discussion, examples of serendipity were collected and analyzed using McCay-Peet's (2013) research procedure.

Table 1

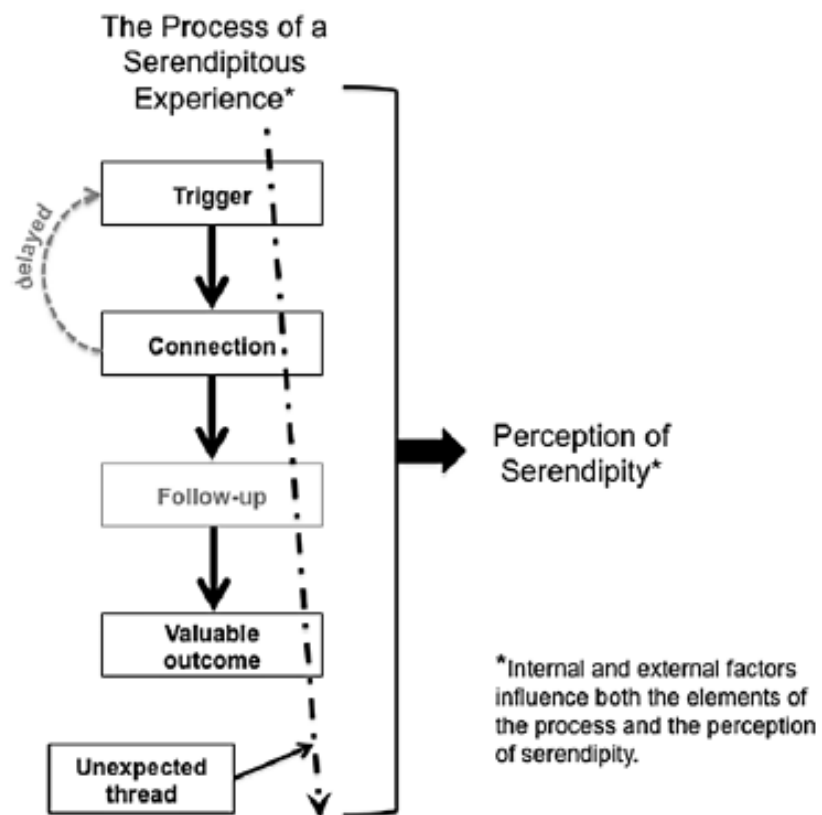
*Constituents of the McCay-Peet and Toms Serendipity Model*

Elements and Factors	Definition
<i>Trigger (E1)</i>	A verbal, textual, or visual cue that initiates or sparks an individual's experience of serendipity.
<i>Delay (E2)</i>	The interval that may occur when an individual perceives a trigger but does not immediately recognize a connection between the trigger and the individual's knowledge and experience.
<i>Connection (E3)</i>	The recognition of a relationship between the trigger and the individual's knowledge and experience.
<i>Follow-up (E4)</i>	Action taken to make the most of a trigger or connection and obtain a valuable outcome.
<i>Valuable outcome (E5)</i>	The positive effect of the serendipitous experience both realized and projected.
<i>Unexpected thread (E6)</i>	The unexpected chance, accident, or surprising element that is evident in one or more of the trigger, connection, follow-up, or valuable outcome elements of the serendipitous experience.
<i>Perception of serendipity (E7)</i>	An experience is understood or regarded to be serendipitous based on awareness of its trigger, connection, valuable outcome, and unexpected thread.
<i>Trigger-rich (F1-Ex)</i>	An environment that contains sensory cues that have the potential to spark serendipity.
<i>Highlights triggers (F2-Ex)</i>	Something or someone who highlights, points to, or otherwise alerts an individual to triggers.
<i>Enables connection (F3-Ex)</i>	Something or someone who encourages explorations, critical thinking, and the sharing of knowledge and ideas that make it possible to see relationships between information and ideas.
<i>Enables capturing (F4-Ex)</i>	Something or someone who helps an individual record or copy a trigger for later use.
<i>Openness (F5-In)</i>	To be curious or open or receptive to experience. Openness may describe a personality trait, conscious strategy, or a temporary state.
<i>Ability to make connections (F6-In)</i>	To be able to think critically or creatively about relationships between encountered ideas, information, and phenomena and the individual's own knowledge and experience.
<i>Prepared mind (F7-In)</i>	The individual's knowledge and experience.

Note: E = element in model; F = factor that may facilitate serendipity; Ex = external; In = internal

We formulated three research questions:

- RQ1: How can we best define work-related serendipity in a creative domain like music and how does it relate to concepts like creativity and improvisation?
- RQ2: Does the model of McCay-Peet and Toms explain how work-related serendipitous (information) behavior unfolds in professional improvised music?
- RQ3: Does the model explain conditions that may influence the process of serendipity within the aforementioned context?



*Figure 1.* The process of a serendipitous experience (McCay-Peet & Toms, 2015, p. 1468)

## Method

### Subject

This study explored serendipitous information behavior of the second author, a professional musician with over 30 years of experience in jazz and improvised music; we will use the abbreviation MB to refer to him. MB's prior knowledge on the concept of serendipity is substantial, which made him an ideal 'reflection partner' throughout the study. MB acquired knowledge on serendipity when he initiated and conducted a musical project entitled 'Serendipities'. This project included the composition and performance of 17 pieces of music, each referring to existing serendipities, like Post-it, Penicillin, and Aspartame (see also Dekker, 2010). The 13-piece big band 'Bik Bent Braam' performed 'Serendipities' several times in 2010. MB's knowledge on serendipity was helpful to define and delimit the concept and to discuss its relationship with concepts like creativity and improvisation (RQ1, see also McBirnie, 2008). Further, his knowledge on serendipity helped to select the serendipitous cases for validating the McCay and Toms model (RQ2 and RQ3).

### Procedure

**Data Collection.** The first author took the interview that followed the semi-structured method of McCay-Peet (2013) to collect data. This quadripartite interview protocol includes questions about (a) the work of the participant, (b) the definition of serendipity, (c) specific examples of serendipity, and (d) serendipity in general. The study's focus was on the third part, namely the collection and analysis of work-related examples of serendipitous experiences. The interview consisted of three separated one-hour parts. The first sub interview registered the first three constituents of the interview protocol (a, b, c), the second interview focused on the last two parts (c, d), and the last interview was used as 'member check' in order to improve reliability,



accuracy, and validity (see also Braun & Clarke, 2006, Yin, 2014). Before the interview, the participant received an email that included contemporary definitions of serendipity (McCay-Peet & Toms, 2015; Merton & Barber, 2004; Van Andel, 1994) and the question to think of one or more examples of work-related serendipity. The three (sub) interviews were recorded with an Olympus-VN Digital Voice Recorder and transcribed.

**Data Analysis.** McCay-Peet and Toms' (2015) model on serendipity functioned as the initial framework for the analysis of the interview. The first author used the same thematic analysis method (Braun & Clarke, 2006) to identify additional relevant themes.

## Results

This study validated McCay-Peet and Toms' serendipity model by analyzing two cases of serendipity in the domain of professional improvisational music. To select proper cases, we first discussed the concept of serendipity, which resulted in a delineation of the concept. We start the results section with this conceptual analysis (RQ1) and subsequently describe and explain the cases in light of the model (RQ2 and RQ3).

### Definition

**RQ1.** MB's first response to the three definitions of serendipity (McCay-Peet & Toms, 2015, Merton & Barber, 2004; Van Andel, 1994) that were presented to him was: "This [MB points to the definitions on a piece of paper] is actually very useful for everything I do. ... What's here is all about improvisation." However, he then boldly states that the three definitions "have nothing to do with serendipity" as they do not explicitly mention that someone should be "in search of something else" when being exposed to the unsought. As such, his view on serendipity equals the rule mentioned in the Introduction saying that serendipity is "finding B,

when looking for A.” MB stresses that serendipity without preconceived search component resembles ‘coincidence’, an important ingredient of his music though. With regard to improvisation, MB tries “... to have as few expectations as possible in advance” when he starts to play. This position towards the improvisational act has developed over the years: “The more I improvise and the longer I do it, I think that I should really sit ‘completely empty’ there [in other words, on stage], and then I’ll see what will happen. That means, it can never be a serendipity, because I’m not looking for something.” However, primed by this study, the issue how his improvisational music making relates to serendipitous experience kept him busy. During the member check in the third interview MB nuanced his initial view on improvisation and search. “I think it is difficult not to be in search of something during an entire concert.” “During a concert, you actually start completely empty. ... And at some point something [musically] happens and you start investigating it, which is a search for a concrete solution. During this search new things can be discovered.” MB illustrates this by mentioning an example to investigate a certain chord, because it sounds so awful (in this case, a C Major 7 or c-e-g-b): “And then [while performing] you discover that a reversal of notes can result in an interesting rhythmic pattern in which the original notes of the chord actually sound much nicer. ... It [i.e., the unsought finding] becomes part of your ‘backpack’ [MB’s metaphor for his musical knowledge base]”. MB stresses that during an improvisation he wants to discover new things and that he is not very eager to make intense use of his ‘backpack’. However, he also admits that “... it’s not for nothing it’s there...” and that such instants of musical knowledge (e.g., patterns) often sound good, because of training.

Serendipity and improvisation, thus, seem to have a relationship. Although MB mentions some examples (e.g., finding an interesting rhythmic pattern when solving the problem of an awful sounding tetrad), these examples of serendipity were not included in the analyses. Instead,

we focused on serendipitous experiences on a higher level of professional music making, namely the planning, execution, and evaluation of musical products, like a concert.

### Cases

MB mentioned several examples of work-related serendipity during the three interview parts. We selected two striking cases to study in depth, of which one was an instance of ‘serendipity in information science’ or SIS (see McBirnie, 2008).

**Case 1: Toxic.** The first case, Toxic, can be categorized as SIS. During a search for musical information on YouTube, this system recommended MB to watch the music video ‘Toxic’ of pop musician Britney Spears. This recommendation surprised MB: “[This kind of music] takes place completely out of my comfort zone. Let’s say that Britney Spears does not have my direct interest. Excellent singer, nothing wrong with that, but it’s not the kind of music I would normally listen to.” Despite this, MB remembered the song ‘Toxic’ and that it included unusual (synthesizer) strings. At that time he was working on a program for a 20-piece conservatory student band, called ArtEZ Big Collective, that also included six stringed instruments (ArtEZ Conservatorium, 2017). The latent need for songs with strings for the ArtEZ Big Collective became manifest when MB saw the recommendation to watch ‘Toxic’. Watching the video incited MB to write an arrangement for the conservatory band. It was performed at the 34th Music Meeting, a renowned world music festival in Nijmegen, the Netherlands. This case is a typical example of ‘finding B (i.e., an unexpected, but potentially interesting song for a big band), when looking for A (musical information for another purpose)’.

**Case 2: Globe.** The second case, Globe, refers to a musical project named ‘Globe Orchestra.’ The organization of the 15th edition of the Music Meeting, assigned this project to MB as musical leader. The rationale of the project was to form a group of musicians from

different corners of the world (i.e., The Tuva Ensemble from Tuva, The Bissarov Sisters from Bulgaria, The Ndere Troupe from Uganda, and improvisers Fred van Duynhoven and MB from the Netherlands) and perform a series of concerts at the Music Meeting and other musical sites in the Netherlands. MB's initial idea was to let the band members "create a fusion of world music." For that reason he prepared some rough drafts for possible pieces of music. However, after the first rehearsals it became clear that this plan would not work. Tuvan, Bulgarian, Ugandan, and Dutch musical traditions were too distinct to start a kind of 'fusion band' right from the beginning. Further, it was difficult to communicate on preconceived musical plans, because not all musicians could speak English. "We have rehearsed for one week. I think during the second day of the rehearsal, I threw away all my initial musical plans and ideas for the project. And my thoughts were: This does not make any sense." This feeling was omnipresent in the group. The musicians then decided to interact musically with their instruments (or voices) using their own musical idiom as starting point. MB continues: "[Y]ou have to stick much closer to the traditions of the musicians and learn from them." At that time he realized that he was about to learn things he had never learned before, due to the remarkable composition of the group musicians. As from that moment (that is: day two of the rehearsal) the musicians decided to look much closer to each other's musical traditions and tried to connect them in musical pieces that emerged during the rehearsals. Time pressure probably geared up the process. In the end, the new 'democratic' approach to music making proved to be successful. The musicians created an interesting musical program that was performed several times in the two weeks after the rehearsal period. Thus, in search for a musical repertoire, the musicians 'found' a new approach to create music for heterogeneous groups of musicians in an effective and enjoyable way. This valuable outcome became one of the 'cornerstones' of MB's professional work: starting projects without

preconceived plan, ‘empty’, with a professional attitude that includes curiosity, interest in fellow musicians, and initiative.

### **Validation**

**RQ2.** McCay-Peet and Toms’ model consists of seven elements (see E1–E7 in Table 1 and Figure 1). The first element ‘trigger’ (E1) was present in both cases. In the case ‘Toxic’ the trigger was a recommendation by YouTube. MB explained this trigger (E1) and elaborated on the technology behind recommendations: “There’s also a negative side to it. When someone is searching the [YouTube] system and gets something in the right column, he/she is inclined to select the first videos in the list. ... There is a danger that you don’t think anymore ... What kind of society we’ll get when Google or YouTube search for you? Then we’ll get an algorithmic society.” MB is aware of the fact that search algorithms influence the selection of sources and that a critical stance towards music information search is necessary (see also Wolf, 2016). “Although I don’t believe in conspiracy theories, I think these companies try to create mainstream. You can control mainstream, not chaos.” As such, it is not strange that MB experienced ‘surprise’ (i.e., ‘unexpected thread’, E6) when the video Toxic (i.e., mainstream music) was recommended to him by the YouTube system. In the second case the trigger included the observation that in a project that consists of a heterogeneous group of musicians preconceived musical ideas do not work [E1]. MB connected this experience to his knowledge that musical improvisers should enter their professional musical projects ‘open-minded’, and start them ‘as empty as possible’ (E3, see also Definition). In these projects it is important the individual musician “... should be curious and take initiative.” To MB’s surprise [E6] all musicians had such an attitude. It contributed to the success of the new ‘democratic’ approach to music making [E5] where deliberation between musicians was strictly musical. This approach to

music making developed further over the years and became MB's standard approach to professional musical projects. As such, this serendipitous experience can be understood as major event in MB's professional career. He classified it as "a wonderful experience that was very influential... and very positive. I can remember that I enjoyed every moment immensely." The serendipitous experience in the first case didn't have such impact on MB's professional work. However, its outcome proved to be valuable [E5] as the arrangement of the musical song Toxic became part of the repertoire of the ArtEZ Big Collective.

**RQ3.** McCay-Peet and Toms' model distinguish seven factors that may influence serendipity (see F1–F7 in Table 1). In the case, Toxic, MB perceived the YouTube system as 'tigger-rich' (F1) that highlights triggers (F2) well. However, MB also pointed to the inadequacies of recommender systems (i.e., "it makes worlds small, mainstream", cf. Wolf, 2016). According to MB, internal (personal) factors like 'openness' [F5], 'ability to make connections' [F6], and 'prepared mind' [F7] were also clearly present in this case. For instance, a firm 'prepared' musical knowledge base makes it possible to recognize an interesting musical video, value its content, and relate it to a musical need. Further, a critical and open mind, results in a better use of recommender systems in musical databases, making the 'algorithmic space' a bit larger. MB also mentioned the 'prepared mind' in the second case, Globe. "Of course, you need to know something about music; otherwise it [trigger and/or connection] will just pass by." MB mentioned other personal characteristics that might influence a serendipitous experience. The first was curiosity. This characteristic relates to openness, but includes also a kind of action. By mentioning 'initiative' as a second feature, MB emphasized the importance of 'action'. According to MB, someone should be 'in search of something' in order to 'find the unsought'. The last personality feature MB mentioned was 'interest in fellow musicians'. Interest relates to

curiosity and increases the chance to witness serendipity. During the first part of the interview, when discussing the Globe Orchestra case, MB stated that the musical environment has hardly any influence on serendipity. “Both open projects and delineated projects can result in serendipitous experiences. It is hard to say when it [serendipity] happens.... You will get different outcomes, I think. But, the situation doesn’t matter: creative or boring.” Despite this remark, the second case proved to be exceptional fertile ground for serendipity. Such a musical environment that consists of a wide variety of curious, interested musicians seems to facilitate more professional growth than less musically varied environments.

### **Discussion**

This study validated McCay-Peet and Toms’ model on work-related serendipity in the domain of professional music. Two cases on professional music information behavior were analyzed. Before selecting cases, we discussed and analyzed the concept of serendipity and its relation with improvisation (RQ1). We concluded that ‘being in search of something else’ is a prerequisite for ‘finding the unsought’ (Van Andel, 1994). The two selected cases met this criterion. Further, we found that serendipity can be a constituent of improvisation. MB recognized this possibility (see also McBirnie, 2008). However, this study did not analyze serendipity on a ‘micro-level’ in depth, as it is difficult to recall concrete instances by means of a semi-structured interview. Future research should address the issue of serendipity in improvisation on a micro-level. We think that (video) observation and cued retrospective reporting (see Van Gog, Paas, Van Merriënboer, & Witte, 2005) is a promising research method to capture serendipity on a micro-level. In this study, we analyzed work-related serendipitous experiences on a meso-level (the planning, creation, performance, and evaluation of a concert).

The McCay and Toms' model proved to be useful to distinguish serendipitous processes (RQ2) and conditions for serendipitous discovery in these cases (RQ3). We identified important constituents of the process of serendipitous experience (e.g., E1, E3, E5, E6, and E7) and factors that influence serendipitous discovery (e.g., F1, F2, F5, and F7). Interestingly, we found other (personality) factors that might promote serendipitous discovery in creative domains. In professional music, personality characteristics like 'curiosity', 'initiative', and 'interest in others' (i.e., fellow musicians) seem to enhance serendipitous discovery. Of course, additional research is needed to generalize these findings.

### **Conclusion**

Seeking serendipity may sound as a paradox, just like controlling it (Corneli, Jordanous, Guckelsberger, Pease, & Colton, in press; McBirnie, 2008). However, results of this study and other research provide increasing evidence that we can influence and stimulate it. We think that future research should differentiate levels of analysis (e.g., micro-, meso-, and macro-level), domains (e.g., leisure, education and training, and work) and contexts (e.g., SIS) in order to scrutinize the phenomenon. Collecting cases and analyzing them in multi-case studies might be an interesting next step to further validate promising models like that of McCay-Peet and Toms.



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