Handbooks of Linguistics and Communication Science

Handbücher zur Sprach- und Kommunikationswissenschaft

Founded by Gerold Ungeheuer
Co-edited by Hugo Steger 1985–2001
Founded and edited by Herbert Ernst Wiegand 1982–2018
Edited by Jeroen Darquennes and Patience Epps

Volume 46.3

Language and Emotion

An International Handbook

Edited by
Gesine Lenore Schiewer, Jeanette Altarriba,
and Bee Chin Ng

DE GRUYTER
MOUTON

Monica López-González
69 Emotional creativity

Abstract: As a multifaceted activity central to the human experience, any discourse on Art must take an interdisciplinary approach. Intuitively, art, emotion, and creativity are interconnected: Emotion both drives the creation of art and is evoked by the artwork itself. Despite this intuitive relationship, past and current research on art, emotion, and creativity as separate and linked topics has failed to provide all-encompassing definitions, explanations, and interpretations; what they are, why they exist, and what they mean as objects and experiences are undoubtedly vast and complex questions. Moreover, entrenched disciplinary silos have until recently prevented empirical integration and thus a holistic perspective on how they feed into one another. As a chapter within a section on affect theories in arts and literary scholarship, the overarching issue of language and emotion is addressed through the lens of the literary text and specifically considers text, readers, and interpretation a dynamic creative process. The resulting experience, moreover, is the conscious appraisal of dynamic searches and emotional exchanges across personal meaning and social context. Merging the humanities with the cognitive sciences, this chapter discusses the core questions and inherent characteristics that make artistic activity such a uniquely personal experience for all.

1 Introduction

It is widely acknowledged that art has the power to move us, transport us, transform us. That art can provide us with comedy and tragedy and elicit the entire gamut of human emotion and experience is undeniable. Whether we are the reader/spectator/user and/or the creator/designer, art plays a fundamental emotional-sociocultural role in our daily lives. From the lullabies sung to us in infancy and the imaginary characters we created during play as toddlers to the live concerts we listen to or perform in, the page-turning stories we read or write, the films we watch or direct, or the architectural works we inhabit or design, art is a part of our human existence. Further yet, "all human life is filled with works of art of every kind – from cradlesong, jest, mimicry, the ornamentation of houses,

Monica López-González, Baltimore, Maryland, USA

dress, and utensils, up to church services, buildings, monuments, and triumphal processions. It is all artistic activity" (Tolstoy 1925: 51). Art and artistic activity are so much a part of our life experience that a world without them is hard, if not impossible, to imagine. Yet explaining the experiences of art and the processes of artistic activity in all their multisensory richness is a daunting one. How can particular arrangements of colors and forms and sound waves and words, for example, elicit such powerful discrete and mixed reactions in us? Are there universal elements within such creative arrangements or is it all a matter of personal interpretation as determined by one's history and taste preferences? Why do we create and engage with art? Are we all creators of art in a world seemingly filled with a range of artistic activities? While these questions will not be definitively answered, this chapter will touch upon the various interconnected components of the artistic experience – i.e., the artistic object, the perceiver/interpreter, and the creator – in order to paint a more cohesive picture of what leads to such a unique and dynamic experience for all involved. Three keywords stand out: Art, Emotion, and Creativity. A discussion on the intersection between art, emotion, and creativity inevitably invites the need to address the hotly debated questions "what is art", "what is emotion", and "what is creativity". While all three questions have long histories of debates and various definitions across cultures and a variety of disciplines, I will take a contemporary and merged perspective on each for the purpose of uniting them and focusing on their core interconnected aspects. Specifically, the current analysis will focus on the literary arts and literary theory from a Western stance to address the handbook's larger theme of language and emotion. Accepting the notion that emotional linguistic labels like "happy" or "sad", for example, refer to a speaker's experience (e.g., Davitz 1969), the literary text stands as an exemplary form from which to dissect the context of the experience in question. This approach to a discussion on language calls attention to the dynamic nature of the experience as it results from the narrative flow on the page, the reader's mind, and/or in the interpreter's actions on the stage. By a contemporary and merged perspective I refer to an interdisciplinary approach that is informed by current thought within the humanities and the cognitive sciences and that weaves the "two cultures" of art versus science, as they currently stand, back into one seamless narrative. The intent is to offer a holistic appreciation of how art, emotion, and creativity interrelate and what can be done to move forward in our understanding of being human and the humanistic experience within academic scholarship and beyond.

2 Art, literary arts and literary theory with respect to language

Beginning with "what is art", we can ask the following more specific question: what is it that constitutes a thing or event or sequence of either to be labeled as such? At first glance, the word art is used to refer to architecture, drama, literature, music, painting, poetry, sculpture, or any other object or activity that has been made and/or performed by a highly practiced and lauded expert or group of experts. Such works are usually exhibited or performed within a cultural institution as a private estate, museum, or concert hall. Prior to

opening night or a world premiere, critics – or those endowed with the authority and respect to opine – are given exclusive access to rate the work's original, aesthetic qualities. The more the work's virtues and its creator's credentials are extolled, the more revered by educated audiences and upmarket collectors alike. This perspective of what constitutes an artistic object/event, however, is only of one kind. A second more historical and global glance beyond this Eurocentric landscape of classical and fine art (or *beaux arts*) reveals that Art as exclusive, untouchable, singular, and unbreakable is hardly all encompassing (e.g., Brown and Dissanayake 2009; Goguen 2000;).

From the late 19th century to at least the year 2020, the world of artistic representation is replete with examples of art movements and their respective artworks redefining the very notion of what art is, can, and should be. A partial chronological rundown through movements – Impressionism, Post-Impressionism, Art Nouveau, Cubism, Dada, Bauhaus, Surrealism, Abstract Impressionism, Kinetic and Op Art, Pop Art, Performance Art, Minimalism, Conceptual Art, Environmental Art, Mass Media Art, Transdisciplinary Art, BioArt, Artificial Intelligent Art, ... to be determined – highlights the constant rule-bending and complete breaking of expectations surrounding predefined artistic purpose, experience, and practice. Whether for personal, political, scientific, sociocultural, and/or technological reasons, artists from all classes of educational and cultural backgrounds have explicitly rejected many norms, challenging a myriad of expectations: the traditional inherited techniques of visual, literary, musical and performance styles, the representation of nature, truth and reality, the status quo of objects, the usage of materials and methods, the meaning of space – the external world, the internal body and their intersection, the blending of genres, the purpose of artistic activity and practice, and even the criteria of the artist or category of creators of art themselves, to name a few. Such questioning and straining of rules and the very foundation of a given framework range from combining, separating, and reforming information piece by piece, to radically transforming information with dramatic imposition of intellectual and cultural change.

What these responses to established standards and categories and schools of thought reveal is a tight cognitive-behavioral relationship to our environment. Everyone experiences their various environments during childhood and adulthood in such vastly different ways that, from a cognitive perspective, anyone's expressive reaction is equally as valuable as the next. In fact, such diversity of experience is essential to building a holistic understanding of how the mind/brain develops, matures, and further changes along the human lifespan. As to the value of one experience over the other, given assumptions need to be examined: who is to determine that a particular artist's poetic license in one context is superior or inferior to another's in another context? Or that one playwright's dialogue is more aesthetic than another's? Why is one representation, experience or interpretation of the world more valuable than the rest? Whose interpretation of an artwork is the "correct" one – that of the artist, the perceiver (expert or non-expert), the target audience for which the artwork has been made, or the collective that is society at large? What is gained by declaring a "correct" way to interpret an expressed experience? More precisely, when shedding community-built and community-led elitist notions and academically determined standards of judgment of what should be when and where and by whom, artists' or any human being's responses offer a plethora of examples of humans reacting most differently,

creatively, and innovatively to their local and global worlds. In other words, such reactions can be seen as humans' efforts to understand themselves, others, and their changing surroundings in an adaptive way irrespective of whether one or many individuals react "more sensitively and intelligently than others" (Brooks 1979: 600), as professed by some. Crucially, all of these reactive differences are a goldmine of data points for understanding the complexity of perception and cognition of the human mind/brain. To focus on a single group, single mindset – i.e., WEIRD or Western, Educated, Industrialized, Rich, and Democratic societies – is to erroneously categorize and explain so-called universal human phenomena (Henrich, Heine, and Norenzayan 2010). More variety in a sample is fundamental to building a more inclusive theory of the human experience.

Further stepping away from the mostly Western-born and influenced movements mentioned and turning to non-Western examples of artistic functions, experiences, and practices provides an even more diverse and comprehensive view of what the arts – lowercased to be all inclusive – as a psycho-behavioral activity mean to humanity at large. For example, not all societies (i) make a distinction between art, crafts, and artifacts; (ii) require specialization, training, and/or established skill to be able to engage in productive and effective artistic expression; (iii) leave art making to untouchable performers while others experience it in silence and/or from afar; (iv) separate rituals, ceremonies, and religious activities from artistic expression; (v) appreciate highly complex visual representations; (vi) perceive art as expensive, extravagant and exclusive; and/or (vii) share the same concept of or classification system for identifying beauty (Dissanayake 2008). Moreover, as also seen with Western-influenced definitions and classifications of music and musicality (i.e., the capacity for music), "the folk-theoretic conceptions that appear to underpin much cognitive and neuroscientific research into music [...] may be wholly inadequate when addressing the forms in which music and musicality may manifest themselves in mind and action in many non-Western societies" (Cross 2012: 669). Crucially, cross-cultural studies matter but they must be conducted in an unbiased way to be genuinely revealing (Thompson and Balkwill 2010). Studying another group's way of thinking, for example, with one's own way of thinking defeats the very point of cross-cultural work. What the above examples (and consequential empirical failings) suggest is that art as a complex behavioral output is something much more. Art is something which encompasses the behaviors leading towards and the consequent experiences evoked from a variety of possibilities: be it from displays in a marbled hallway and narratives unfolding through time and voice in a grand hall to Paleolithic cave paintings and collective dancing within a shared space for community members.

What is it, then, that unites experiences resulting from art if we are to use the word art as a label? Does it amount to the emotion experienced during and after sensing (e.g., viewing, listening, touching, smelling), participating, and/or creating an object or event? Is it the resulting group bonding formed from making and engaging in a shared experience? Is it its communicative power to express what every day linguistic encounters cannot? Is it its transformative power to offer alternative possibilities, imagined realms? Is it ultimately the experience of "exploring the possibilities of being, of becoming in the world. [...] in pushing forward the boundaries of what can be experienced?" (O'Sullivan 2001: 130). From an evolutionary perspective that examines where, when, and why human behaviors arose,

art making is a universal, biologically rooted behavior that does all the above. Specifically, it is the product of making the ordinary special: "in all instances of this behavior, in all times and places, ordinary experience (e.g., ordinary objects, movements, sounds, utterances, surroundings) is transformed, is made *extra*ordinary. [...] making special is the ancestral activity or behavior that gave rise to and continues to characterize or imbue all instances of what today are called the arts" (Dissanayake 2008: 14–15, emphasis in the original). From dance to poetry to our actual bodies, we take the very elements we use daily like movement, rhythm, intonation, and our natural physiology, for example, to exaggerate, embellish, reorder, repeat, and shape anew. The result is an amplified, complex, and novel awareness of our environment otherwise unachieved by other means. Furthermore, it is critical for social understanding, cohesion, and transformation and our successful survival as a species. Under this proposal, artistic expression evolved to make particular events more salient, pleasurable (or disagreeable), and memorable, and any expression that results in such can be identified as art. Art, therefore, is human experience enhanced. Extending this perspective further, we are all, in fact, artists reacting to our world in unique ways. The copious number of art movements created, those in the process of developing and yet to be discovered, and those to be of the future, support the notion that artistic expression is influenced by the environment in which it is created. As such, many perspectives simply cannot be reduced to a singular reigning voice, nor should any one voice dominate academic scholarship or the limelight. The upshot of this reality is that investigation in anything arts related becomes exponentially more complex.

While all formats of expressive representation can be argued compatible for enriching and questioning saliency, pleasure, and memory for a specific outcome, I will zoom in on language and text because of the overall focus of this handbook. Language stands as a unique human symbolic system to characterize most sharply because of its relationship with – but not necessary function in (Fedorenko and Varley 2016) – thought and its productive point to communicate information and knowledge from one person, or a set of persons, to another. Moreover, artistic uses of language in which imagery and sound are transformed in non-standard ways to evoke deeper meaning, enhanced emotions, and/or greater reflection stand as an intriguing window into the role of textual objects as devices for interpreting, imagining, and creating representations of our existing or non-existing environment for better or for worse.

2.1 The compositional nature of the literary text

Start with the following hypothesis: to read a literary text is to compose a literary text. What textual objects represent and mean and why they exist are long-standing questions of debate. Typical questions are (e.g., Figlerowicz 2012; Fish 1976; Hogan 2016; Iser 1972; Oatley 1994, 2011): Does a text originate in the writer's mind? Is text the outward representation of a writer's thoughts and feelings? If so, what is shared through text? Is a text a writer's finished, polished product as defined by the writer herself and/or the editor/publisher? Or does it begin with the writer's initial idea and then unfold with the consequent transformations of that idea? Or should we move away from the writer and take the position

of the one who reads/interprets/perceives the text? Does a text stand independent from its originator? Does a text (re)originate in the reader's mind? Can a text ever be completed if it originates anew with every reader? While the physical text must exist in order to read, is a text realized, in terms of its purpose and meaning, during reading and/or after a reader has interpreted it entirely from start to finish? What does it even mean to interpret a text? In line with Western notions of expertise and scholarship (e.g., checklist of educational accomplishments), must the reader be learned and from a particular school to interpret a text? And what constitutes enough knowledge to be an expert interpreter and to then endow recognition of expertise in another for the sake of propagating an interpretation and a theory of interpretation of a text? The core question of what validates a particular reading or an interpretation of a text also has its own sizable and controversial history of perspectives. As we can ask what constitutes art or artistic activity in our discussion above, we can also ask what constitutes an experience of art or of a textual object. Considering literary texts examples of artistic expression, a brief summary of particular developments within Western literary theory from the past second half of the 20th century in regards to the analysis of readers and reading underscores a path of twists and turns with an eventual underlying trend: experiencing a text is a kind of creating.

Beginning with the *new criticism* approach of the post-war period, emphasis was placed on the words and structural elements of the writing itself as a means to read and understand poems and novels. As such, the writer's history, social milieu, personal intentions, and/or purpose for writing the text – otherwise known as "peripheral" or "secondhand" information, or "extrinsic" criticism – were kept out of the analysis of the text. The argument held was that text – full of self-containing literal and figurative meanings – stands autonomous, immune from the baggage of external information surrounding it from outside the page, be it from the writer and/or the reader. One of the more extreme views considered text so self-sufficient that even emotion derived from it was the direct result of a set of precise, identifiable forms. Thus, text expresses in a predetermined formulaic way not only characters, experiences, and narratives, but evokes very specific emotions in the reader: "The only way of expressing emotion in the form of art is by finding an 'objective correlative'; in other words, a set of objects, a situation, a chain of events which shall be the formula of that *particular* emotion; such that when the external facts, which must terminate in sensory experience, are given, the emotion is immediately evoked" (Eliot 1921: 92, emphasis in the original). This claim makes the implicit assumption that specific emotions are representable by an exact equation, and if written out correctly (and presumably teachable for reproducible gains), the representation will unquestionably lead to the evocation of such emotion(s). What this suggests is a fixed correlative relationship between specific events in life, particular linguistic forms, and certain emotional reactions. Perhaps in life-defining events shared across all human cultures irrespective of age, geography, and time, like death, the claim is uncontroversial. That is, it is quite possible to imagine that the loss of a loved one widely leads to pain, grief, and mourning. While such an emotional reaction is, naturally, a result of the level of significance a particular event has on an individual and her consequent appraisal of it as it factors into her worldview, "emotions tend to be elicited by particular types of event[s]. Grief is elicited by personal loss, anger by insults or frustrations, and so forth" (Frijda 1988: 349). But the textual representation of emotion as

formulaic is too narrow a concept. Given the variety of life events possible, the diversity in which cultures express, represent, and appraise basic and complex emotions (e.g., Mesquita and Frijda 1992), and the vast array of possible and unique ways in which humans perceive and engage with their environment(s), the argument is unstable. The argument is perhaps reflective of a particular population within a particular context. To argue for an all-encompassing formula despite the variety possible within the human experience, however, demands empirical validation.

In a way, the new criticism perspective was the fortuitous result of a teaching circumstance whereby "students, many of whom had good minds, some imagination, and a good deal of lived experience, had very little knowledge of how to read a story or a play, and even less knowledge of how to read a poem" (Brooks 1979: 593) and none of those labeled as "new critics" specifically intended to engender an entire critical discipline (Brooks 1979). Whether for purely pedagogical reasons or greater literary influence, to claim a possible reader has "very little or even less knowledge of how to read" a story, play, or poem, implies that (i) artistic qualities and artistic valuation of a text are quantifiable; (ii) the meaning of a text lies within its form: letters and punctuation, (iii) there is a correct way to read/interpret a text to extract its literal and symbolic meanings; (iv) correctly reading/interpreting a text requires a particular set of skills; and (v) a particular education can teach the necessary skills. Academically minded in nature, new critics did not, however, neglect the role the reader retains as "essential for 'realizing' any poem or novel" (Brooks 1979: 598). In the end, text sitting on a page remains text until a reader lifts it away from the page, method notwithstanding.

2.2 A dynamic relationship between text and reader

Critical response to the new criticism movement beginning in the late 1960s and developing most significantly during the 1970s and early 1980s became known as *reader-response criticism*. The claim was clear in its name: literary texts and their meaning(s) are not autonomous because they cannot be dissociated from the role the reader has as a responder of the text while she interprets it based on her own life experiences, personal desires, passions, ideas, and the like. Meaning of a text, therefore, is created through the act of reading and does not simply sit on the page unaltered for the right (educated, by socially accepted standards) interpreter to see and draw out with method like a surgical dissection. Instead, real-time conflicts arise between meanings of different types as a holistic meaning is identified from understanding a text's relationship with its environment, textual or otherwise, and the reader's own viewpoint, be it a different reader or even the same reader but with new life experiences. Hypothetically, the same word or set of phrases could prompt, for example, meaning x in reader 1 and meanings x and y in reader 2 and over time prompt a meaning z in reader 2 after a second reading years later that resulted from merging meanings x and y. With this approach, attempting to determine a correct reading/interpretation is as fruitless as attempting to identify all potential readings/interpretations given the number of possible readers/interpreters and life experiences. Moreover, interpretation of a text and consequent meaning determination is a dynamic process: "As the reader uses the vari-

ous perspectives offered him by the text in order to relate the patterns and the 'schematised views' to one another, he sets the work in motion, and this very process results ultimately in the awakening of responses within himself" (Iser 1972: 280). By further implication and in contrast to Eliot's (1921) concept of emotion transmission from author to reader, emotion elicited in the reader is not reducible (or reproducible) to a single formula. Instead, emotion elicitation is a multilayered, merged result: the text itself with its particular words, phrases, characters and narratives suggesting/representing an emotion or many emotions as created and expressed by the writer and the reader's understanding of such text as she retrieves meaning from the words and phrases present and those evoked, and compares, contrasts, matches and/or interweaves her personal narrative within the text. As such, the reader's experiencing of the text is at the heart of interpretation because

> the reader's activities are at the center of attention, where they are regarded, not as leading to meaning, but as *having* meaning. The meaning they have is a consequence of their not being empty; for they include the making and revising of assumptions, the rendering and regretting of judgments, the coming to and abandoning of conclusions, the giving and withdrawing of approval, the specifying of causes, the asking of questions, the supplying of answers, the solving of puzzles. In a word, these activities are interpretive [...] and because they are interpretive, a description of them will also be, and without any additional step, an interpretation, not after the fact, but of the fact (of experiencing). (Fish 1976: 474, emphasis in the original)

Such value placed on the reader's active engagement with – and in essence transformation of – a text as it is personalized in the moment takes elitism out of artistic appreciation and its selectivity of a few, and democratizes it by acknowledging the subjective nature of interpretation and the potential enjoyment by all. Enjoyment, or pleasure from actively interpreting a text, can lie along a continuum of types whereby those types are motivated by different reasons. Such reasons could include personal experiences of the moment and/or social norms implicitly pervading our perception of the textual world.

The question now becomes one of scholarly preference, if not one of continued dispute: is it essential to identify the correct interpretation (assuming the existence of such to begin with and fully agreed upon standards for identification, if even possible)? Or is it more valuable to understand how and why a single linguistic form can lead to a plurality of interpretations? Or the reverse as well: a single emotional experience can be expressed a multitude of ways. The search for every possible interpretation is not an endless scrabble among potentially infinite outcomes. As Fish (1976) argues, we all fall within some sort of *interpretative community* in which we share the same reading strategies as a result of shared educational and sociocultural experiences. Essentially, much of our experiencing of artistic activities is learned and defined by the environment to which we are exposed. We are taught how to perceive, appraise, and respond to our environment and accordingly receive praise or rebuke in return. As a result, the environment is what defines our general and particular mental schemas of the world and allows for empathy of others who come from within our same communities. Thus, shared (or at least recognition of similar) experiences, comparable modes of expression, and consequent relatable interpretations will arise. Identifying as many interpretative communities as possible, therefore, becomes essential. It is the entirety and complexity of the environment and how mental schemas form and transform over time that necessitates empirical attention.

2.3 Emotion as part of the interpretive experience

While the 1980s and beyond have seen ever more nuanced breakdowns of the role of literary text from a myriad of voices to engender, navigate, scrutinize and/or challenge power, gender, racial and/or status relationships across time and geography, for example, the underlying contemporary premise has remained: The relationship between text and reader is dynamic and a part of that relationship is defined by emotion. An extreme argument could posit that the emotional investment a reader/interpreter has with a text is the very reason for the dynamism involved. Whether a poststructuralist viewpoint of what comes first (i.e., the text or the reader), or a deconstructionist approach whereby, paradoxically, text remains both text with its unaltered patterns of meanings functioning independently of a reader and yet particular to and changeable by a reader with her personal voice, the back and forth between ever-hierarchical hypotheses of what a text is, can, should, and could mean is to further feed extremist theories of literature à la de Man (1971) as a medium with impossible meaning. Either way, a literary work depends on a reader in its most basic sense as it must first exit the writer's mind and then be known by others outside the writer herself. Only then can a narrative "run on the minds of the audience, as a computer simulation runs on a computer" (Oatley 1994: 66) or otherwise the writer finds herself "archivando sus obras en el armario oscuro de su mente hasta finalmente morir con todo clausurado" [filing away her works in the dark closet of her mind until finally dying with everything locked up] (López-González 2014: 119) and running her own internal simulations without ever expressing them textually and publicly. Whether a string of words as determined by the author or a set of imagined personal reflections as evoked in the mind of the reader, or an indissociable mix of both as words and images intersect, the following question arises: what do we make of the observation that literary text – or any artistic object/activity for that matter – can describe, evoke, and alter emotional states in such an intuitively different manner than the day-to-day activities that incite liking and aversion and the whole gamut of human emotion and affective experiences? As an aside, this question is different from asking whether art has as its purpose to reflect, express, and/or evoke emotion and whether the arts are, in a mimetic and Aristotelian sense, valuable imitations or representations or simulations of reality and thus narratives of the real world (Butcher 1902).

That literary text can describe, evoke, and alter emotional states sets up a particular reactive chain of events between an artwork and its perceiver/interpreter: the presented narrative is built in a particular way that, among other things, arouses an emotional response or array of responses in a reader/interpreter as she reads through the text and imagines the narrative in her mind. Moreover, the emotional response is subject to change as the reading progresses and the narrative evolves in both the text per se and the reader's mind. Meaning is confirmed, disputed, and/or questioned as text flows across the page like music across time. In music, emotional responses are to an extent the result of the fulfillment and violation of implicit and explicit musical expectations; patterns of fulfillment and violation are what arouse an emotional response (Meyer 1956). Fulfillment and violation are not constrained to expectations regarding physical musical patterns, but may also arise in reaction to the thoughts and memories triggered by the music. The dynamism between

text and reader/interpreter discussed above is, in part, an emotional one and depends on a positive one at the very least for the reader to continue reading and not withdraw from the activity with disinterest and/or aversion. Positive interest is sustained as the likelihood of an outcome is assessed across time, feeding curiosity, suspense, and potential reward of satisfaction for following the narrative through to its end. Thus, reading/interpreting of a text could, hypothetically, be an entirely emotional activity. Mood-management theory proposes that readers, viewers, and listeners deliberately choose the media with which they engage with the hedonistic goal to sustain their good mood, positively lift their current mood if not good enough, or eliminate any bad mood altogether (Zillmann 1988). While an interesting proposal, choice in media is probably also guided by contextual factors and current goals like availability of media options and selection decisions made for research, pedagogy, and/or entertainment, for example. Irrespective of the reader's ultimate goals with media selection, two key words stand out: emotional response.

As with any discussion on art, beauty, and/or the aesthetic experience and their inter-relationship (or lack thereof), emotion and response are indispensable factors to consider. The questions are: What exactly is emotional and by what means do emotions arise? Is it the text itself with its characters' lives and storyline? Is it the textual narrative as interpreted by the reader? Is it the imagination evoked in the reader of "what could be, if and only if, for not only the character(s) in the narrative but for me as well?" And/or is it the act of reading about an alternate world separate from or similar to the reader's own? Can we even separate the two (i.e., the text as an object from the reading of the text as an action)? As suggested by Oatley (1994), a difference of sorts can be made between a reader who remains outside the artwork and a reader who enters into it. In a sense, there can be an external-type observer and an internal-type observer. While the external observer is receptive to an artwork but stands psychologically apart from its narrative, the internal observer figuratively enters the narrative and engages psychologically with its characters and settings. This motivates the next set of questions: What types of emotions are involved when remaining detached from or engaging with the literary world? Are they of the same type? Is emotional engagement necessary to understand the narrative? This is a particularly intriguing sub-topic because it strikes at the core of whether or not literary fiction – or any artwork more generally – is capable of arousing actual, real emotions as those encountered in real life or simply imagined, simulated emotions that mimic real ones (Gaut 2007). In other words, does the reader genuinely feel emotion and have an emotional experience as she would in her daily life (whereby "feel" means physiologically instantiated and thus her behavioral expression through laughter, sweating, tears, etc.)? Do the feelings then activate a series of real, behavioral outcomes within the reader's day-to-day? Or does the reader recognize emotions but not actually feel them and remain emotionally distant but intellectually engaged (i.e., no physiological consequences, at least not consciously)? Does the sympathetic recognition of a character's plight within the narrative, for example, imply the reader has not experienced emotion in the physiological sense? Is empathy required to experience a real-life emotion? There are no concrete answers to any of these questions. The very same questions plague the study of music-induced emotions with empirical behavioral and neural evidence supporting both emotivist and cognitivist positions arguing for the evocation and presence of genuine and non-genuine emotions, respectively (see

Hunter and Schellenberg 2010). To complicate matters even further, to what extent is conscious awareness of an emotional experience during reading relevant to substantiating whether an emotional experience is real or imagined? Does it even matter what is real or imagined if the act of reading and the intellectualization of a narrative produce a pleasurable feeling or recognition of satisfaction? This is significant given that an emotional response and its physiological outcomes can occur without awareness (e.g., Tsuchiya and Adolphs 2007). James Joyce's *Portrait of the Artist as a Young Man* (1916) stands, for example, as an exemplary case in modern Western literature of the increasingly complex use of language and form to progressively illustrate the development of its lead character and, as proposed, the subconscious shaping of readers' emotions throughout (e.g., Jones 2017).

This discussion draws attention to four major points: First, an emotional interest and attachment of sort arises when reading and interpreting a literary text. This could be said not only for the reader during and after reading, but for the author as well before, during, or after writing the work. If not yet empirically determined or entirely clear as to whether any true causal relationship exists, folk intuition contends that emotional tensions or dissonances between the creator and their environment can be an impetus to artistic development and expression. Second, text and reader cannot be dissociated when examining what experience and interpretation of a text entails. Not only are meaning and interpretation intertwined, but any emotional response is also as much the result of the writer's character(s) described in the narrative as the reader's interpreting, transforming, and in a mental way – unless also enacted out in the reader's life outside of the act of reading – vicariously living through the narrative or running through a simulation in her mind. Third, pushing the argument further, because the reader is as much a part of the text by interpreting it as the writer is in initially composing it, a literary text is constantly being (re)written. (Re)writing of a text is not bound to figurative composition in the mind of the reader, as it can also be literal and manifested in a multitude of ways. Shakespeare's plays are a well-established case in point. Although written during the late 1500s and early 1600s, they continue to be the subject of much (re)interpretation by producers, directors, and actors alike in a variety of artistic media, languages, and locations, catering to ever-changing worlds, audiences, and viewpoints ravenous for the next-best (re)interpretation or at least one that caters to their personal perspective of the world. In WEIRD cultures where originality and newness – whether genuinely achieved or not – are lauded with pomp and circumstance, popularity with the masses of a (re)interpretation goes a long way. Moreover, such dynamic, creative relationship between reader/interpreter and text is initiated every time the reader/interpreter engages with the text irrespective of how often she engages with it. Unless a reader is afflicted with a cognitive impairment that prevents retention and integration of information, the initial reading and consequent readings continue to build upwards from interpretation to interpretation to create an entire mental edifice of interpretations of interpretations. Expanding further to other artistic activities, theatre, musical theatre, and the performing arts more generally, are self-evident examples given their live performance characteristics of bodies and voices in perpetual movement and the changes arising both within and between the performers onstage and within the audience members as well: Every single performance is by definition unique. Every rehearsal, every public performance is a new interpretation (un)consciously integrating the known past with the present

and unknown elements of the moment and predictions of the immediate future. Fourth, the above three points underscore the progressive state of artistic expression and its dependency on a variety of elements. The original writer, the text itself, and the reader are an interconnected emotional network.

3 Emotion. History of debates and contemporary perspectives

Moving forward with the very question posed in 1884 of "what is an emotion?" (James 1884), we enter into uneven terrain. Despite its entrance into the empirical behavioral and psychological sciences in the late 19th century and a notable amount of ink and digital space dedicated to its understanding – from its meaning, role, and function to its characterization, activation, and regulation – there is undeniable agreement among researchers that there is still no consensus on what an emotion is (Izard 2010). Some have gone as far as to suggest its elimination altogether (Dixon 2012). As described, it is a "keyword in crisis" (Dixon 2012: 338) and belongs to the "I know it when I see it" category (Stewart 1964), whereby an indescribable intuition evades clear definition with language. The same can be said with the word *affect*, which in many instances has been blurred with the word *emotion*, falling in and out of favor depending on disciplinary study (e.g., philosophy or psychology) and locus of focus (e.g., the individual or society, the internal or external, the indissociable link between self and all). In cultural disciplinary circles it all fits under the more general umbrella of "critical emotion studies" or CES (Trainor 2006), which refers to the "various disciplinary forays into the relationship between emotion and whatever it is that a particular discipline studies, from brain chemistry to teacher education to election results" (Trainor 2006: 645). To not enter into the endless debate of whether a "new 'new' in rhetorical/cultural studies" (Rice 2008: 202) that has become known as *affect studies* is needed and all its possible societal applications (for which there are many), a short summary of affect and emotion will suffice.

The general term *affect* is used to refer to emotional experiences. CES, therefore, is the academic study of affect and its evocation, purpose, function, and effect on everyday life. Emotional experiences are broken down into mental and somatic activities. Such activities are often measured against two-dimensional models that include a valence scale from negative to positive and an arousal level from low to high intensity. Arguments continue against the insufficiency of such models for explaining the complexity of emotion and instead posit four dimensions: evaluation-pleasantness, potency-control, activation-arousal, and unpredictability (e.g., Fontaine et al. 2007). From a biological standpoint, emotional experiences are the result of emotions or adaptive responses meant to increase the chances of survival. Moreover, emotions arise as a result of motivated behavior to preserve or alter a current situation (Hogan 2016). As such, many researchers believe a trigger of some kind is necessary for emotions to arise. The trigger can be external as in a physical object or event, or internal as in thoughts or memories. While the trigger is cognitively appraised and identified in regards to its meaning, physiological manifestations like heart rate changes,

laughter, shivers, sweat, tears, etc., occur to collectively lead towards a beneficial behavioral output or action. Emotions typically fall under a category. Categorization supports the idea that there are basic or universal emotions (i.e., anger, fear, sadness, enjoyment, disgust, and surprise), each with their own adaptive function (e.g., Ekman 1992) and cultural manifestation. Another term used to describe emotional experiences is *mood*. Moods, in contrast to emotions, appear to not require a particular trigger to arise, often occur with less intensity, have a gradual onset, last for longer periods of time, and seem more difficult to describe (e.g., Beedie, Terry, and Lane 2005). While both emotions and moods influence behavior for the general purpose of adapting and surviving in an ever-changing environment, emotions are thought to bias (immediate) action while moods are thought to influence cognitive processes like memory and decision-making within long-term contexts.

If emotions are adaptive responses of the mind/brain and body to circumstance, how then do we classify real or simulated emotions evoked by literature? Are they, too, adaptive responses? If so, for what purpose? In other words, is it beneficial from a survival perspective to enter and engage with the narrative world of a text whether as writer or reader/interpreter? Firstly, literary texts must be considered proper environmental triggers. Although initially disregarded, fiction has taken on more value by cognitive psychologists since the 1980s as a veritable object of study, particularly one on human nature. Fictional (and non-fictional) texts are a way to better understand other human beings because they provide an ecologically valid window into others' worlds, lives, perspectives, and experiences. Effectively, momentarily following along with the intentions and interactions of others different from oneself opens the door to a world of unforeseen alternatives. Studies have shown that the act of reading and figuratively entering the worlds of others has a positive effect on social skills; empathy is built and social aptitude improves (Oatley 2011). A second observation now arises: emotional experiences resulting from the reading/interpreting of text are valuable experiences (be they physiological or not). Whether to empathize and understand the various points of the narrative, to compare and contrast the characters' narrative with one's own, or simply to transport oneself intellectually to a world outside of one's own as created by someone else and oneself in the heat of the moment, "we internalize what a character experiences by mirroring those feelings and actions ourselves" (Oatley 2011: 66). And yet the question of "what is going on" persists: What is the trigger that leads to such evocation of imagination and resulting emotional experiences? Where is, in effect, the locus of emotion? Can it even be reliably located? Many argue language itself is the trigger with its stylistic features (or lack thereof) like alliteration, ellipsis, foregrounding, inversion, irony, metaphor, rhyme, etc., as gleaned from studies testing the role of such features in reader's reading times and affect ratings (e.g., Miall and Kuiken 1994a, 1994b). Or perhaps it lies at the general level whereby the (dis)trusted narrator and unraveling plot altogether elicit acceptance, hesitation, curiosity, hostility, anticipation, and the like at various points in time. Or perhaps it is the reader's/interpreter's real-time interpretive response to the writer's proposed simulation she has entered and recreated in her mind, one where she will appraise words, meanings, contexts, and worlds all biased by her personal state of mind. As Booth states, fiction is "the art of communicating with readers" (Booth 1961: xiii) and writing and reading a novel is an interactive process between writer, text, and reader/interpreter. Such interactive process, I posit, is by nature emotion-

al. But can we thoroughly explain this emotional evocation? The nature of images – e.g., visual, aural – evoked during reading/interpreting are unknown. Although brain imaging has begun to support the intuition that "reading fiction invites for mind-wandering and thinking about what *might* have happened or could happen" (Altmann et al. 2014: 26, emphasis in the original) compared to non-fiction reading which engages an action-based reconstructive approach to events, cognitive neuroscience has yet to shed any light on the neural correlates of the development of literary experiences (Jacobs and Willems 2018). Considering the literary experience a creative one, experiencing a text is a kind of creating which is an emotional journey.

Return to the earlier stated hypothesis: to read a literary text is to compose a literary text. The following question now arises in this dynamic relationship between text and reader: In what way exactly is the reader a composer/creator? More specifically, is the reader a creator in the sense of using her personal perspective and imagination to interpret and transform the literary object presented before her? Is the reader being creative in the same way the author was creative in (re)experiencing, (re)imagining, and (re)writing the narrative of a literary text? Put another way, in the absence of a physical, tangible outcome resulting from the activity of imagining, transforming, and abstractly experiencing a literary text as a reader/interpreter, is the reader's creative response from interpreting a text equivalent to the creativity involved in writing the actual text? Additionally, where and how does emotion fit into this process of interpreting/creating? A discussion on "what is creativity" will aid in unraveling the meaning of *creator* and lead to the conclusion.

4 Creativity. Definitions and conceptions

Creativity is a fascinating topic because it embodies so many aspects of human intelligence. Any discussion on creativity immediately brings up a set of questions (by no means exhaustive) – as with art and emotion, I list them to underscore the multifaceted nature of the topic: How do we define creativity? Are there various types of creative behaviors and processes? Is creativity a persistent and long-term process? Or is it one that is spontaneous and short-term? Or both? How does creative ability arise? Is it innate, learned, or a mix of both? Is intention and purpose a prerequisite for creativity? How does emotion affect creative output? How does creativity arise within a collaborative group setting? How do we effectively test for creative ability and the process(es) leading to creative outcomes? Do creative outcomes necessitate functional value and societal appreciation to be considered creative? The simple answer to these questions is that there are many answers and, as expected, they remain inconclusive and incomplete.

Fundamental to survival is our innate ability to problem-solve by finding new, alternative solutions to progress further as a species (Csíkszentmihályi 1997). A glimpse at the archeological record of Paleolithic technology provides provocative evidence suggesting a direct correlation between tool making and function with the evolution of complex mental capacities (such as natural language) exclusive to humans (Ambrose 2001). Neuroscientist Suzana Herculano-Houzel proposes that the developed cognitive capacities in humans are the result of a greater number of neurons in the cerebral cortex as compared to other ani-

mals (Herculano-Houzel 2016). That is, a larger number of cortical neurons leads to greater information processing capacity. A wider glance of human history, say, from the Age of Enlightenment to the Industrial Revolution to the Digital Age to the Artificial Intelligence Revolution of the 2000s, reveals our consistent progressive drive as a species. As a mental phenomenon that coalesces a multitude of cognitive processes – from attention, memory, and emotion to reasoning, evaluation, and reflective decision-making – the process of creativity can be thought of as an optimal mode of intellectual functioning that leads to the generation of unconventional, novel and useful solutions to problems (e.g., Boden 1998; Dietrich 2004; Ward, Smith, and Finke 1995). While folk intuition entertains the idea that artistic expression is the premier example of human creativity, we can turn to everyday use of natural language and conversation (prior to enhancement or complex elaboration thereof) to begin to grapple with what creative behavior within a conceptual space entails. From a finite set of elements, speakers of any language can produce an infinite number of novel expressions to communicate a vast range of ideas. Consider your most recent conversations and notice how incredibly different they were from one another, even if they addressed the same topic and were had with the same interlocutors. Now think further to all the dialogues you have read or heard in novels, plays, and movies; maybe a few repetitions here and there following social conventions and idioms, but overall an enormous amount of uniqueness. In effect, "creativity is not the exclusive preserve of the individual genius, [...] creativity is also a matter of dialogue with others" (Carter 2004: 11). In a similar vein, consider music, another hierarchical and combinatorial system that relies on rules, is equally expressive, and combines a finite set of notes and rhythms to produce an infinite range of musical phrases within a given musical idiom (e.g., Berkowitz and Ansari 2008; Mithen 2005). From the radio's playlist of pop songs to the concert hall to the intimate jazz club, for example, every musical experience is without question vastly distinct. Language and music not only exemplify the constant refashioning and recontextualization of linguistic and musical resources during communication, but also most importantly highlight the generative and novelty-seeking nature of an adaptive system such as us.

Adapting behavior to a specific situation is essential for getting things done. Adapting behavior within the context of a conversation means anchoring dialogue on the shared interlocutor's representation of the topics in the subject matter at present (Pask 1976) and reaching a maximal, effective exchange of information through cooperation (Grice 1975). Key to the conversation or task at hand is our ability to consider the elements within our surrounding environment, throw options back and forth as in a tennis match, evaluate and filter them by choosing an optimal option (or one believed to be most optimal under the current circumstances) in response to emotional and/or intellectual reasons, and integrate it within the task being performed. Choosing and evaluating between possible moves and knowing what constitutes an optimal one is possible because perception and meaning are bound by both the subjective experience and the subconsciously learned customs and norms resulting from enculturation since birth. Information as an object and information processing, selecting, and transforming as actions are not emotionally neutral things and activities. To put it another way, "internalized emotional guidance systems are not entirely private subjective states, but are learned within a cultural context that accounts for the ability of one individual to construct an insight, an intelligent event, that is recognized and

appreciated by others" (Radford 2004: 63) and thus regarded as a novel act. Extending to the role of the reader/interpreter in reading/interpreting a text, the actions taken are equally interactive and emotionally guided – absorption of the lines of words and making sense of their various meanings as determined by the reader's knowledge of the language, culture, time, etc., within and outside the narrative and her own (in)experiences with the content of the text, and continual appraisal of the text's past and unfolding events in real time.

4.1 Breaking down the what and how of creativity

As with any complex human cognitive phenomenon, defining, pulling apart, and modeling the nuances of the creative process continues to be a line of inquiry ripe for ingenuity and advancement. There has been an array of theoretical and empirical work on the what and how of creation from disciplines such as art history and philosophy to computer science and neuropsychology (e.g., Bastick 1982; Berliner 2009; Bergson [1896] 2012; Bunge 1962; Calvin and Bickerton 2001; Chatterjee 2004; Collins 2005; Csíkszentmihályi 1975; Finke 1996; Gardner 2011; Gero 1996; Guilford 1950, 1956, 1957; Jung et al. 2010; Miller and Hou 2004; Ness 2013; Simonton 2000; Sloboda 1988), with current trends, for example, in psychological research applying the findings to innovating strategies within the workplace to improve stagnancy (Zhou and Shalley 2011) and within the classroom to increase idea generation and problem synthesis and analysis (e.g., Cropley 2017; López-González 2017b; Pang 2015) and to encourage and prepare next generation interdisciplinary thinkers and doers (López-González 2017b). Computational models have also been building ever more sophisticated software, questioning the very essence and value of human creative behavior through the invention of an artificially intelligent (AI) professional visual artist known as The Painting Fool (Colton 2008, 2011) and the composer program Emmy (Cope 1992, 2005). Further advancement has led to the creation of robot musicians jamming with humans (e.g., Bretan and Weinberg 2016) as well as to the use of AI software as a complementary compositional tool within the popular (e.g., Deahl 2018) and broader musical worlds. Such options have enabled musicians with creative possibilities, not replaced them.

The way in which the study of creativity has been approached by multiple disciplines lies in its empirical origins. The systematic cognitive psychological study of creativity received significant attention in 1950 when American psychologist Joy Paul Guilford made it the focus of his now classic presidential address to the American Psychological Association. His first statement set the stage, revealing a particular mindset at the time: "I discuss the subject of creativity with considerable hesitation, for it represents an area in which psychologists generally, whether they be angels or not, have feared to tread. It has been one of my long-standing ambitions, however, to undertake an investigation of creativity" (Guilford 1950: 444). The subsequent surge in empirical work on a mental phenomenon oftentimes considered intangible – Plato assigned creative poetic output to the Gods of the Muses (Plato [380 B.C.E.] 2008) – most likely occurred because this investigative appeal came at the right place at the right time. Computer scientist Alan Turing had already foreshadowed his imminent "can machines think" seminal discussion on the behavioral and

algorithmic possibility of machines being able to think like humans (Turing 1950) during World War II. Simultaneously, the cognitive revolution was responding to the dominant behavioristic approach of psychology and its theories about stimulus-response associations with arguments for the existence of innate modules and mental representations to fully characterize the complexity of human behavior (e.g., Chomsky 1959). Under this *creative cognition approach* (Finke, Ward, and Smith 1992), which developed more extensively in the 1990s and continues to this day, creativity is not only an essential phenomenon of human intelligence but an accessible and testable behavior amenable to the methods of the empirical cognitive sciences and capable of being successfully, and ultimately completely, modeled by computers (Boden 2009). As such, an array of neural experiments has also been conducted since the advent and mass availability of brain-imaging techniques in the 1990s to establish a structure-functional link between creative (artistic) behavior and particular brain networks (e.g., Amedi et al. 2008; Aziz-Zadeh, Liew, and Dandekar 2012; Beeman et al. 2004; Bengtsson, Csíkszentmihályi, and Ullén 2007; Berkowitz and Ansari 2008; Donnay et al. 2014; Fink, Graif, and Neubauer 2009; Howard-Jones et al. 2005; Jung- Bhattacharya and Petsche 2005; Limb and Braun 2008; Liu et al. 2012; Ludmer, Dudai, and Rubin 2011; de Manzano and Ullén 2012; May et al. 2011; McPherson et al. 2016; Sandkühler and Bhattacharya 2008; Shah et al. 2013; Solso 2001).

Despite the overwhelming amount of dedicated time and space, the field as of the year 2020 finds itself in a two-fold empirical gridlock. Firstly, more interested in being a first within a particular artistic medium and experimental paradigm, studies have begun to repeat themselves without actually replicating and cross-validating experiments. Secondly, fundamental integrative questions still abound. Most notably, we do not have clear answers for why some individuals are more creative than others (e.g., to what extent are capabilities dependent on genes and/or environment), or when, where, and how the mind/brain precisely integrates its multi-sensory environment to combine, explore, and/or, more dramatically, transform ideas to create new ideas. Granted, the difficulty with studying creativity is perhaps due to its very DNA. Creative outputs are by definition novel, unrepeatable, consistently different, functional, time-consuming in effort spent, dependent on a solid knowledge base, and in some cases, spontaneous and serendipitous. What this suggests is that the very process of creative thinking and the resulting outcomes do not adhere to an established *a, b, c, d* paradigm and are not predicted by strict adherence to the scientific method (López-González 2015b, 2016b, 2017a). This, I propound, is the red flag in a desert of conformity and a further appeal to a revision of methods to acquire new data. Without innovation in how we test and expound on creative behavior, the line of inquiry between readers' interpreting and creative performance will not flourish. What follows is a discussion of various empirical approaches, results, shortcomings, and new cross-disciplinary, literary-music work that paves the way to further investigation.

4.2 One problem, many solutions

Delineated in Guilford's (1950) address was the current problem with methodology:

> To provide the creator with the finished product, as in a multiple-choice item, may prevent him from showing precisely what we want him to show: his own creation. [...] [T]he quest for easily objectifiable testing and scoring has directed us away from the attempt to measure some of the most precious qualities of individuals and hence to ignore those qualities. (Guilford 1950: 445)

If creativity is characterized by the novelty of a solution to a problem, then an efficient way to study the emergence of creative solutions is to provide problem-solving tasks that offer an array of possible outcomes. Under this assumption, creative ability is measurable in terms of divergent production, or the quantification of varied outcomes in response to specific stimuli (Guilford 1950, 1956). Unafraid to accept the unknown and taking advantage of the unpredictability of emergent solutions, Guilford (1950), among several experimental proposals, makes note of the *frustration test*. Named as such because participants reportedly found it frustrating to complete, the test gave the most general of instructions with regards to a set of items in hopes of obtaining maximally different results: "do something with each item; whatever you think should be done". Continuing forward with this paradigm and exploring the emergence of insight as a result of mental imagination, others had participants engaging in a range of mental tasks: from (i) visualizing the superimposition of sets of letters, numbers, and/or geometric forms in novel ways to discover new, emergent forms and patterns, to (ii) imagining an entirely new image using a set of unalterable, familiar items to create new items. Participants' verbal reports revealed the emergence of new forms otherwise not known, and the invention of familiar items with new parts that may or may not have had functional value but were nonetheless alterable during a subsequent exploratory process that imposed particular functional or categorical criteria on the emergent forms (Finke 1996; Finke, Pinker, and Farah 1989). Although simple in their setup, the studies consistently revealed adeptness at not only recreating familiar forms with new sets of items (also known as *combinational creativity* [Boden 1998]), but also inventing entirely new forms without any immediate or obvious functional value. Furthermore, regarding participants' awareness of their new insight, the studies revealed that some preliminary exploratory manipulation with the pre-inventive forms was a requisite precursor to the suddenness of that insight. Insight does not come out of nowhere.

But in what context does insight emerge? In more complex experiments where new shapes are generated from predetermined sets of object parts, results have revealed that the creative thinking process is most likely a combination of two types of cognitive qualities with one type more involved than the other depending on the creator's goals (and perhaps even personality traits, a correlational issue also questioned and explored by Guilford in his [1950] article): spontaneous/unstructured (or chaotic thinking) and intentional/structured (or ordered thinking). In the former type, novel forms rapidly arise unplanned without any explicit conscious deliberation and usually incorporate unexpected associations; the lack of a defined end goal, the open-mindedness to be surprised, and I would add the motivation to break established rules within the conceptual space, leads to remarkably ingenious innovations. In the latter type, novel forms are generated in a controlled, system-

atic manner (under perhaps, using Guilford's [1950] terms, an inflexible mindset that is insensitive to problem recognition) and are influenced by prior knowledge, preexisting categories, and even familiar ideas resulting in outcomes not as novel as those resulting from spontaneous/unstructured thinking (Finke, Pinker, and Farah 1989). That distinct ways of thinking and differences in personality can affect creative behavior and output invites the hypothesis that emotion and creativity are tightly coupled. What kind of emotion is needed for creativity to flourish? A merging of popular conception and an overall fascination in the lives of grand thinkers and doers like the "mad scientist", "tortured artist", and "child prodigy" have not waned – see, for example, Stiles (2009), Kopiez (2011), and Zara (2012). Obsessive traits, recurring maladies, and spurts of brilliance, among other things, tickle people's insatiable desire to know more about the lives of others and the entertainment industry does not shy away from accentuating the emotional ups and downs many times correlated with genius accomplishment. As studies have continued to show, however, "the relation between emotions and creativity remains fraught with ambiguity" (Averill 2004: 230). While current overwhelming evidence points towards greater cognitive flexibility and thus more creative problem-solving capabilities as a result of positive affect, studies have shown that positive and negative emotions and moods both facilitate and inhibit creative pursuits and outcomes (e.g., Baas, De Dreu, and Nijstad 2008; Conner and Silvia 2015).

Expanding upon these behavioral observations, Dietrich (2004) has proposed that these two basic types of creative processing modes (deliberate and/or spontaneous) can be further broken down with each projecting computations to cognitive and/or emotional structures to lead to the following four types: (i) deliberate-cognitive that Newell, Shaw, and Simon qualify as "requiring high motivation and persistence: either taking place over a considerable span of time (continuously or intermittently), or occurring at high intensity" (Newell, Shaw, and Simon 1962: 65–66) (i.e., insight as a result of sustained, focused work as in the years of preparation George Eastman, Founder of the Eastman Kodak Company, endured prior to patenting the first film in roll form in 1884), (ii) spontaneous-cognitive (i.e., a *Eureka!* moment as in the claim of Isaac Newton synthesizing the basics of gravity upon witnessing an apple's fall from a tree), (iii) deliberate-emotional (i.e., an *Aha!* moment as in discovering Waldo during a frantic search in Martin Handford's illustrated *Where's Waldo?* books), and/or (iv) spontaneous-emotional (i.e., an epiphany as in Joaquín Rodrigo's response, in part, to the devastating miscarriage of his wife's first pregnancy with his guitar *Concierto de Aranjuez*). All of these modes hypothetically interact during creative thinking and potentially share the same final neural pathway to arrive at an outcome (Dietrich 2004). These quick, temporary bursts of types of mental states reveal once again the essence of creative thinking: the constant exploration of both problem and solution and the not always visible, yet ever-present, element of affect as motivator, trigger, and/or sustainer. As Boden (2009) mentions, much of human history's greatest achievers were adept at ordered, exploratory creativity and only sometimes, under a variety of aligning circumstances, reached chaotic, transformational heights leading to historical, ground-breaking creativity. This type of creativity whereby a newly discovered object, concept, and/or theory laid the foundation for far-reaching innovations and societal changes was achieved by such Science-Art polymaths as Santiago Ramón y Cajal (1852–1934), Arthur Conan Doyle (1859–1930), Max Brödel (1870–1941), and Zaha Hadid (1950–2016), for example, who all forged

ahead despite academic, financial, and/or personal setbacks of all kinds. Following this line of thinking regarding creative outputs and outcomes, the creative level of the literary text (i.e., from minimal to extreme novelty and innovation) could be argued to be fundamental for engendering a range of alternative and transformational interpretations. Specifically, the more likely a literary text is to evoke a wider range of interpretations per reader, the more creative the literary text. The creative text can be measured by its linguistic form, structure, and context and its capacity to stimulate, intrigue, entice, inspire – all triggers of affect – "if-then" possibilities depending on each reader's own personal history. Creative text by the author and creative simulation in the reader's mind are mutually dependent. The creative process is, therefore, an emotional process.

4.3 Prefrontal cortex and beyond

The primary goal of cognitive neuroscience research is to find correlations between neuroanatomical structure and psychological function. Studies in the neuroscience of creativity essentially ask the following: What parts of the brain are involved during the act of innovative production? A simple enough question until we consider more succinctly the complexity of creative thinking, as everyday conversation intuitively reveals and behavioral experiments have shown. Duch (2007) summarizes the three key elements most clearly: (i) neural space capable of supporting complex states or availability of a rich associative network acquired through knowledge; (ii) imagination or the ability to combine in many ways local brain activations into larger coherent wholes; and (iii) a filtering/decision-making/evaluation system that selects from working memory the most interesting products of imagination. We know in a general sense that at the core of insight recognition, evaluation, and expressive realization is the prefrontal cortex (PFC) and its functionally divided aspects: the ventromedial (VMPFC) area which is connected to the limbic system and implicated in emotional and logical evaluation of behavior (Damasio 1994) and the dorsolateral (DLPFC) area which (a) receives input from the posterior occipital, parietal, and temporal sensory and association cortices, (b) sends output to motor areas for action, and (c) is implicated in key cognitive functions such as sustained and focused attention (Posner 1994), temporal integration (Fuster 1995), and working memory (Baddeley 1996). As a result of this complex network, real-time decision-making relies most importantly on a working memory information buffer in the PFC to hold, rearrange, and restructure relevant knowledge for solving a particular problem (Damasio 2001). Moreover, activating, instead of deactivating, mood states comes with greater motivation, higher levels of neurotransmitters such as dopamine and noradrenalin, and enhanced working memory capacity. The assumption is greater cognitive flexibility, abstract thinking, processing speed, and access to long-term memory (Baas, De Dreu, and Nijstad 2008). One of the better-documented examples of the four hypothesized processing modes has been the investigation of the *Aha!* moment in which brainwave electroencephalogram (EEG) data (Jung-Beeman et al. 2004) and blood flow data from functional magnetic resonance imaging (fMRI) (Bowden et al. 2005) were used to study subjects as they created common two-word compound phrases from single words. Jung-Beeman et al.'s (2004) study revealed that the brain prepares for the oncoming break-

through: the conscious suddenness of insight is preceded by a burst of gamma activity whereby the anterior superior temporal gyrus (aSTG), a structure involved in auditory and language processing, in the right hemisphere becomes unusually active 300 ms before the insight as integration of information occurs. This process has been further dissected and observations include (i) a neural correlate of mental impasse, or blank state whereby the problem-solver struggles to find a solution despite extreme focused attention, in parietal-occipital brain areas, (ii) a correlation between the right PFC and conscious restructuring of the problem, and (iii) higher activity in posterior regions within the parieto-occipital area during significant problem understanding and final, sudden retrieval of a solution (Sandkühler and Bhattacharya 2008). Additional studies have shown that sudden insight is also correlated with significant activity in the emotion learning areas of the amygdala (Ludmer, Dudai, and Rubin 2011), highlighting the positive emotions experienced during identification of a working solution. The reader/interpreter, in her voyage through the simulation she has created and continues to work through as she reads/interprets, we can hypothesize, is emotionally invested in her eventual arrival to narrative insight and affective fulfillment.

While these experiments have focused on relatively common verbal complexities typical in a variety of linguistic contexts, brain studies, like behavioral experiments, have turned towards art professionals and their capacities in an effort to capture the highly skilled brain during quick, simplified, controlled moments of artistic creation. The focus on art and not other equally creative activities within other disciplines is perhaps due to both an ignorance of other fields and how innovation emerges and to the arts' evolutionary adaptive value to humans and its insatiable response to and power to elicit "novelty, surprisingness, incongruity, complexity, variability, and puzzlingness" (Dissanayake 1974: 214). This particular focus makes three primary assumptions about artists (and subsumes the Western viewpoint discussed earlier of training and professional status as a sign of artistic proficiency): (a) they are experts at creating novel items, (b) they are immune to experimental constraints and can readily adapt to performing in-the-moment highly original, generative tasks (in comparison to novices who may struggle to innovate because their command of the basic skills, lexicon, and rule-based knowledge necessary for fluency in the artistic domain remains incomplete), and (c) their cognitive processing stages differ significantly enough from non-artists that differences can be observed in their functional neuroanatomy. These criteria should be, in theory, applicable to other creative activities not related to art making.

Results are at best partially descriptive and not nearly explanatory. Studies of visual artists and non-artists as they sketch novel drawings reveal that there is greater neural activity in PFC regions in the artists' brains than in the non-artists (Amedi et al. 2008; Bhattacharya and Petsche 2005; Solso 2001). Interestingly, greater cortical thickness in the left lateral orbitofrontal cortex has been significantly linked with higher overall creative achievement (Jung et al. 2010). These data, of course, do not explain whether the higher level of creativity is a product of an increase in gray matter or general greater mass of gray matter in particular brain regions. Other artistic mediums such as story generation (Howard-Jones et al. 2005), improvisational and imagined dance (Fink, Graif, and Neubauer 2009), choreographed movement imagery (May et al. 2011), and creative brainstorming and

writing (Shah et al. 2013), to name just a few, have also received attention and have all similarly reported activation in orbitofrontal and dorsolateral prefrontal cortices during performance of the artistic task. In the musical arts, studies with musicians improvising simple, single-handed musical sequences have unsurprisingly observed activation in relevant cortical areas associated with rapid output of auditory-motor sequences, language production and comprehension, and top-down processing (e.g., Bengtsson, Csíkszentmihályi, and Ullén 2007; Berkowitz and Ansari 2008; Donnay et al. 2014; Liu et al. 2012; de Manzano and Ullén 2012). In sum, the spontaneous generation of ideas can be understood as a perception-action feedforward-feedback cycle that includes mind-wandering and cognitive control processing (Loui 2018). Emotion was not a target of interest. In the case when highly simplified positive, negative, and ambiguous facial expressions were the emotional targets for musical improvisation, emotion was seen to modulate limbic, reward, and prefrontal brain areas, with significantly greater hypofrontality and deeper flow states with the positive emotional targets (McPherson et al. 2016). Furthermore, an interesting finding in one of the jazz studies observed both deactivation in the DLPFC and activation in the medial PFC in the task where most improvisational freedom was allowed and musically observed; a mental state the investigators suggest is potential neural evidence of creative flow (Limb and Braun 2008), or a balance between attenuation of awareness and intense acuity of self-expression. The term *flow* was originally coined in the 1970s to describe an optimal experience that occurs during a highly motivated, intense, enjoyable, and creative (but not necessarily artistic) act by the individual in question (Csíkszentmihályi 1975) and, as more recently documented, possible in all members within a collaborative-creating context (Berliner 2009; Sawyer 2003, 2011). To reemphasize, highly creative thinking and doing involves intense pleasure and joy; again, affect as motivator, trigger, and sustainer. While the dissociative neural state in the above study has yet to be cross-replicated in other musical, artistic, and non-artistic creative acts, it stands as a temporary provocative finding for two reasons: (i) altered states of consciousness – (day)dreaming, drug-induced states, endurance running, hypnosis, and meditation – whereby various similar distortions occur with respect to time perception, adherence to social constraints, and focused attention, tend to exhibit a transient decrease in PFC activity (Dietrich 2003). The finding suggests a neurological similarity to creative thinking states. And (ii) because the very premise of the Surrealist art movement of the 1920s was founded on the idea that creative invention "soit verbalement, soit par écrit, soit de toute autre manière, le fonctionnement réel de la pensée. Dictée de la pensée, en l'absence de tout contrôle exercé par la raison, en dehors de toute préoccupation esthétique ou morale" [proposes to express, be it verbally, or written, or by whichever method, the actual functioning of thought in the absence of complete control as determined by reason, and exempt from all aesthetic or moral concern] (Breton 1924). Such a neural observation may be modern technology's answer to a century-old proposition. Essentially, flow is letting go, moving along with the pleasurable moment of unfolding accomplishment.

5 Creativity, art, and emotion. An interdisciplinary approach

Whether neuroscience as it stands today in 2022 can add anything substantial other than the creative process of invention involves both cerebral hemispheres and default and executive networks in some way or another, the results offer objective evidence to support the claim that artists (and highly creative individuals not necessarily artists) engage in more top-down processing than non-artists (and less creative individuals not necessarily non-artists). In a behavioral priming experiment testing differences between word associations (Gruszka and Nęcka 2002), the more creative participants revealed a greater ability to notice associations, and particularly more complex ones, than less creative participants. Part of the claim is that noticing associations is an effect of having access to a "wider 'fan' of activation of their semantic network" (Gruszka and Nęcka 2002: 204). What this means is that a wider and more advanced knowledge and representation space as well as an openness to uncertainty helps with the unconventional pattern searching and problem restructuring necessary for a distinctly different and novel solution to be found. Extrapolating beyond professional artists and considering any profession, characteristics in a creative individual therefore are: openness to the unknown, to challenge, and to learning → behavioral activation to acquire new knowledge → access to bigger knowledge space → generation of more complex network of connections within the knowledge space → greater ease and agility with immediate future unknowns → more options (e.g., remote alternatives) in view → more creative outcomes.

Returning to the how of insight and emergent behavior, a proposal highlights a set of hierarchical steps to the design process. As new variables and consequent new conceptual schemas are integrated and the current design space is transformed, a novel design emerges (Gero 1996). This presumably entails that the *problem space* (from Newell and Simon 1972) continually alters its shape with every novel idea until the most appropriate design for the intended goal is achieved. In a similar vein, the malleability of compositional goals as the composer moves back and forth generating solutions while she shapes and reshapes her composition is common during the long-term compositional process (Collins 2005). Insight, therefore, is neither linear nor discrete but a dynamic multidimensional state that depends on both recent past and near future information, ideas, and solutions and the motivation and perseverance to persist. Narrative insight while reading – or the reader's engagement with and understanding of the characters' lives, actions, feelings, etc., in the text as a result of their interpreting the text and bringing it alive within their mind's simulation – functions much in the same way as a composer composing. As a composer works through ideas that each shape the next idea and the composer herself until a final cohesive one is chosen, the reader dynamically selects, organizes, interprets, and synthesizes the text as an active participant moving through past, present, and future experiences (Rosenblatt 1985). By virtue of transforming the text before her, the reader has changed her cognitive outlook. Additionally, every time the same text is re-read, the experiencing of it is different. Different expectations arise, distinct motivations emerge, new interpretations materialize, and old and/or new emotional states change.

But past and future solutions are loaded concepts. While Gero's (1996) model can explain how novelty evolves from preexisting forms and Collins's (2005) compositional case study implicitly captures the role of bigger picture societal expectations, they do not explicitly consider integration of the important, and fundamentally inevitable role ever-changing contexts – as in personal, cultural, and social – play in evaluative and consequent implementation processes (Glaveanu et al. 2013; Mumford et al. 1991). Bringing to the forefront both the creator's mind and physical state within their environment and the environment's acceptance of and response to the creator offers an even larger contextual perspective of the creative process within various artistic mediums. Such approach on the creative process affirms that internal cognitive, emotional, and motivational elements of the creator indeed are inseparable from, and in constant dynamic feedback with, external expectations, interpretations, and reactions from society (Glaveanu et al. 2013). Much in the same way a text's meaning depends on its reader/interpreter, a creator's creation depends on the milieu in which it is being created – creation and interpretation do not happen in a vacuum. As Dewey remarked, "the external object, the product of art, is the connecting link between artist and audience. Even when the artist works in solitude all three terms are present. The work is there in progress, and the artist has to become vicariously the receiving audience" (Dewey 1934: 106). From this perspective, artistic creativity is hardly a singular experience. Rather, it brings to the forefront the inevitable inclusion of societal expectations regarding, for example, aesthetic qualities and cultural norms to the creative development process and resulting creative outcome. Rejecting societal expectations is to consider them in order to break them. In line with Booth's (1961) discussion on the voice and role of the author, the creator's judgments, observations, and opinions about the world they live in are inextricably woven into their work. Creator, created object, and interpreter – whose judgments, observations, and opinions about the world she lives in are also inextricably woven into her interpretation – are all interconnected and depend on each other for meaning, both old and reinforcing and new and enlightening. The creator cannot isolate herself from the society in which she lives – to which the interpreter also belongs – as much as her creation cannot be dissociated from her. The paradox is inevitable: to isolate herself from societal wants and desires is to make the emotional choice of shunning herself from emotion.

5.1 Improvisatory interpretations

Under this umbrella of sociocultural psychology, it is imperative to also consider what live collaborative, or group, creativity may reveal about the process, the individuals involved, and the resulting outcome. Given the real-time exchange of ideas within conversation or on stage among jazz musicians or improvisational theatre actors, for example, group creativity becomes a product of *interactional synchrony*. Interactional synchrony is when all engaged parties listen and react to one another and maintain group coherence (Sawyer 2003, 2011). This synchrony characteristic within a group highlights the importance of partners within the group identifying each other's spontaneous insights in the moment and then negotiating with each other in search of a unified goal for conversational fluidity and innovation. Understanding live interactional synchrony between various voices has motivated the criti-

cal empirical position to explore the ecological realness of creative-interpretive behavior within theatre and its greater theoretical and societal implications (López-González 2014, 2015a, 2015b, 2016a, 2016b, 2017a, 2017b, 2018a). Ecological realness is paramount because it signifies accepting and incorporating complex, multivariate environments full of interconnected sensory information such as language, music, emotion, body language, scenography, and color. As a result, multiple layers of interpretation can coexist in the moment and their coalescing in real-time, given the context of live theatre, become the performance itself (López-González 2015b, 2016b, 2017a): actors responding to the text and to each other, musicians responding to the actors and to each other, and the audience responding to the actors and to the musicians. From an experimental standpoint this requires adopting a more open-ended and spontaneous approach to scientific inquiry within cognitive psychology, neuroscience, and theoretical modeling, and to artistic purpose through artistic practice. Moreover, it means accepting that Art and Science disciplines as most creative and enduring methods for crafting our human story can directly inform and shape each other (e.g., López-González 2018b), leading to a more unified theory of human cognition.

Knowledge is gained by continuously interacting with others through exchanges, be they linguistic or non-verbal (Pask 1976). Taking this interactional learning a step further, what does this learning consist of within the real-time conversation between text, actors, and improvising musicians? Improvised music to fully scripted film and dramatic works is a reservoir of invaluable data points. Such data reveal how visual information and narrative language are interpreted and translated in-the-moment into musical language. Most significantly, and in relation to our discussion throughout, it spotlights the dynamic nature of interpretation between text and interpreters of music and language, a dynamism filled with the immediacy of searches and choices. As mentioned earlier, music and the visual and performing arts' worlds are prime environments for study because of their (a) live, integrative multisensory experiences, (b) rich storytelling narratives for experimentation outside the traditional laboratory setting, and (c) openness to public engagement.

While music may seem more abstract than language with alternative interpretations more vastly prominent, a longer glance at the core of musical interpretation reveals otherwise. In describing what music is essentially capable of expressing, composer and philosopher Leonard B. Meyer writes: "Music does not, for example, present the concept or image of death itself. Rather it connotes that rich realm of experience in which death and darkness, night and cold, winter and sleep and silence are all combined and consolidated into a single connotative complex [...] which then becomes particularized in the experience of the individual listener" (Meyer 1956: 265). So what does this mean for live, improvised music in theatre? Just as particular sounds combine to have shared and learned meaning in natural language, music, too, albeit not as semantically specific, has a similar capability. Breaking down Meyer's (1956) example, if death has a set of universal physical characteristics, e.g., collapse, stillness, and silence, then combining musical variables (e.g., rhythm, tempo, and loudness) in any number of ways can onomatopoeically mimic those recognizable physical features and consequently elicit an image of death in the interpreter and listener. Music, given its lack of semantic specificity, then, functions as a communicative medium expressing concepts and emotions via connotative representations. Philosopher Peter Kivy further posits that music's expressiveness results because "various features of

music, such as tempo, mode, and melodic patterns, display a 'structural resemblance' with features of human behavior [such as vocal and bodily expression] that are expressive of [specific] emotions" (Thompson 2009: 129). In effect, when tasked with interpreting text, voices, bodies, and scenes with intense emotional changes, musicians mimic the nuances of the target emotion and represent the surrounding narrative environment via various combinations and recombinations of musical variables (mode, pitch, rhythm, sound level, tempo) (López-González 2015b). In the absence of clearly marked emotional linguistic targets, the improvising musician focuses on identifying a global narrative emotion within the particular dialogue sequence and creates matching musical phrases that reflect the expected physiological reaction(s) to such emotion (e.g., emotional agitation expressed via disjointed rhythmic sequences and a mix of half and whole steps). Every new emotion identified is musically represented via different combinations and recombinations of musical variables (López-González 2016b). When multiple musicians are involved, analysis of the improvised music reveals an in-the-moment improvisatory synchrony between the physical rhythm between the actors moving on stage with the question-answer-response rhythm between the musicians, the words and phrasings of the actors with the notes, pitches, and phrasing of the musicians, the emotional intent of the actors with the enhanced, emotional interpretation/translation by the musicians, and the inclusion of sound effects to mimic event descriptions mentioned by the characters/actors. The overall setup creates a unified music-language quartet of voices, bodies, and instruments dynamically expressing meaning and engendering, exchanging, and merging ideas to produce a cohesive narrative whole (López-González 2017a). In these live and unique contexts, interpretation is creation and creation is emotional in both purpose and outcome.

Several crucial differences must be noted, however, between a single musician and several musicians tasked with interpreting text and producing an optimal coherent artistic experience (i.e., positive outcome) (López-González 2018a):

1. Different personalities are present versus one type of personality. Participants of a group collectively bring various musical and negotiation styles to the task. This entails the inevitable introduction of a variety of possible interpretations that must be whittled down to one agreed upon kind.

2. Different knowledge of and experience with established rules and norms in music and in performance versus one set of such knowledge and experience. Participants of a group also collectively bring various instrumental characteristics and musical negotiation strategies to bear on the task at hand. A variety of possible interpretations are traded and converged into one cohesive selection.

3. Different internal emotional states are present versus one set of emotional states. A group entails various personal emotions and various expression strategies that will inspire, inhibit, and modulate the task at hand.

4. Collaboration and therefore negotiation of actions are necessary through real-time self versus group feedback. Feedback to and from others moves center stage as musical compromises are made: (i) behavioral risk is assessed (i.e., how much to break away from expectation to reach novelty) in comparison to others. Others may increase or decrease risk-taking with specific cues; (ii) personal styles may or may not be kept in check. Others may constrain or encourage personal style with specific cues; (iii) per-

sonal emotional states are tested in comparison to others. Others may agree with or contradict emotional state(s) with facial or musical cues; (iv) behavioral predictions are defined by the call and response actions of others (i.e., cues to lead or to follow); and (v) creative ability is revealed as compared to others. Others may be faster or slower to ideate novel sequences and encouraging or discouraging towards novelty.

In sum, the core of narratives is emotion and these studies suggest that interpretations are traded emotions.

6 Conclusion

This research has discussed and integrated three key concepts fundamental to the understanding of the artistic experience: art, emotion, and creativity. Exploration of these concepts has uncovered a plethora of interpretations regarding their definition, explanation, and representation. The consistent increment of interpretations throughout decades of academic scholarship reveals the difficulty and complexity of defining and interpreting each of these concepts, let alone their integration. I began this chapter with a broad discussion on art, focused on the dynamic nature of literary text, and ended with insights from the empirical analysis of the live integration of text and music. The borders of artistic genres were crossed, and various questions permeating interpretation and creation were merged. Clear-cut answers, however, remain elusive.

Emotion and creativity were presented in separate sections to better highlight current research and findings. Furthermore, the contemporary perspective presented here sought an interdisciplinary approach, weaving knowledge within the humanities and the cognitive sciences to not only bridge the gap still existent in academic scholarship but to fortify and better understand their intrinsic link. The various sections have also revealed that research on each of the disciplines is inconclusive. The many interpretations and arguments discussed remain unstable and the manner in which they have been approached raise more questions, many of which I present to reiterate the complexity of the topics at hand and to ignite alternate ways of thinking. Part of the problem begins with the fact that art – literary text as the focus within the umbrella topic of language and emotion – has been studied by many academic schools of thought, establishing categories, standards, and rules of their own. Such characterization of art, however, has not provided empirical evidence regarding the endowment of authority, capacity, knowledge, and/or experience to define, characterize, and validate the so-called correctness of what art is. This reality, unfortunately, is the result of insufficient cross-cultural studies and their consequent integration.

Art and artistic activities are products of the human mind/brain. Art is not only about academic knowledge and/or education but activities and outcomes that encompass personal experiences as defined through the lens of cultural factors, environmental determinants, and overall human behavior. Affect and its expression, which can be evoked or suppressed, are about experiences felt, imagined, expected, simulated, transformed, created, and revealed (in no particular order). Creativity is a human ability fundamental for survival and drives the continuous development of mental capacities and behavioral action. We prob-

lem-solve, strategize, and search for solutions to get things done in our daily lives. Emotional expression through artistic activity is one route for imagination and creative thinking and doing. Any simplistic, isolated, and single perspective on what art is without integrating the evocation, function, and processes of affect and creativity in an interdisciplinary and holistic manner cannot provide concrete answers towards how any of these concepts should be defined and interpreted.

In regards to creativity, its definition and interpretation have also remained elusive in spite of decades of research dedicated to the topic. Research on creativity has, unfortunately, persisted with experimental reductionism and repetition (at both behavioral and neurological levels) without consistent validation or ecological validity, hindering our understanding of human creative capacity in all its multisensory, emotional, and intellectual richness and the various ways creativity is expressed by different individuals in diverse contexts. Even when art is the focus of study, it deserves to be realistically represented. That is to say, a real-world approach to studying art outside of sterile laboratories is critical. Artistic expression is inconsistent, unpredictable, and irreproducible. To ignore internal (e.g., motivational) and external (e.g., expectations) factors or to sacrifice one for the other in light of the scientific method is to isolate the mind/brain from the very environment on which it depends and flourishes. Only an interdisciplinary approach that integrates questions, theories, methods, and data from the cognitive brain sciences (regarding language, affect, music) with questions, theories, methods, and products/experiences from artistic practice and the humanities and unites them into a hybrid discipline will be able to shed light on how to characterize and define the processes of creative thinking and doing and the resulting array of interpretations of this world. The live interactional synchrony observed within group theatrical creativity, for example, is a step forward in challenging how and what to study by redefining the core of empirical investigation and broadening the goals of research. Moreover, considering a more fluid connection between art forms encourages the acquisition of multiple data points. Essentially, interpretation of text between musicians within a theatrical space highlighted the real-time musical negotiation of individual textual interpretations and their resulting musical interpretations to yield a unified musical outcome. Interpretation, therefore, embodies a complex system of dynamic searches and emotional exchanges and the word "experience" is the label we use to denote our conscious appraisal of such. Although not explored here but open to future study is the recognition of the utility of these studies for expanding interdisciplinary methods and implementing consequent innovations within industry. One very specific example, as discussed in López-González (2018a, 2019, 2020), is the application of cognitive behavioral models of human creativity to the autonomous vehicle space as a way to improve the intelligence capacities of driverless car technology in a world where human drivers and machines are intended to interact with each other.

What this discussion affirms is the richness of perception and the impossible nature of reducing art or an artistic activity/experience to any one perspective, any one emotion, any one aspect of the experience itself. In focusing on the literary text as a medium for illustrating the dynamic nature of interpretation, the multifaceted nature of language is critical to engendering the reader's creativity: language expresses emotion, language reflects cultural knowledge, language communicates narrative, and language generates interpretation where-

by emotion, cultural knowledge, narrative, and interpretation are all individually and collectively open to the numerous possibilities of our mind's capabilities. As a result, there is no benefit to narrowing down perspective to a one and only one. Let alone a presumed correct perspective when the richness of experience is what ultimately counts for the artistic medium to survive beyond the ivory towers of academic institutions. We should acknowledge and celebrate diversity as the very result of our evolutionary history and the core of our humanity. New artistic activities will emerge; new frameworks to interpret such activities will arise; new language will be created; new interpretations will follow. The creative capacity of humans does not allow for validating one interpretation over another because as many minds/brains existing and to be, as many interpretations possible and to come.

7 References

Altmann, Ulrike, Isabel C. Bohrn, Oliver Lubrich, Winfried Menninghaus & Arthur M. Jacobs. 2014. Fact *vs* fiction: How paratextual information shapes our reading processes. *Social Cognitive and Affective Neuroscience* 9(1). 22–29.

Ambrose, Stanley H. 2001. Paleolithic technology and human evolution. *Science* 291(5509). 1748–1753.

Amedi, Amir, Lotfi B. Merabet, Joan Camprodon, Felix Bermpohl, Sharon Fox, Itamar Ronen, Dae-Shik Kim & Alvaro Pascual-Leone. 2008. Neural and behavioral correlates of drawing in an early blind painter: A case study. *Brain Research* 1242. 252–262.

Averill, James R. 2004. A tale of two snarks: Emotional intelligence and emotional creativity compared. *Psychological Inquiry* 15(3). 228–233.

Aziz-Zadeh, Lisa, Sook-Lei Liew & Francesco Dandekar. 2012. Exploring the neural correlates of visual creativity. *Social Cognitive and Affective Neuroscience* 8(4). 475–480.

Baas, Matthijs, Carsten K. W. De Dreu & Bernard A. Nijstad. 2008. A meta-analysis of 25 years of mood-creativity research: Hedonic tone, activation, or regulatory focus? *Psychological Bulletin* 134(6). 779–806.

Baddeley, Alan. 1996. Exploring the central executive. *The Quarterly Journal of Experimental Psychology Section A* 49(1). 5–28.

Bastick, Tony. 1982. *Intuition: How we think and act*. New York: Wiley.

Beedie, Christopher J., Peter C. Terry & Andrew M. Lane. 2005. Distinctions between emotion and mood. *Cognition and Emotion* 19(6). 847–878.

Bengtsson, Sara L., Mihály Csíkszentmihályi & Fredrik Ullén. 2007. Cortical regions involved in the generation of musical structures during improvisation in pianists. *Journal of Cognitive Neuroscience* 19(5). 830–842.

Bergson, Henri. 2012 [1896]. *Matière et mémoire: Essai sur la relation du corps à l'esprit*. Présentation par Denis Forest. Paris: Flammarion.

Berkowitz, Aaron L. & Daniel Ansari. 2008. Generation of novel motor sequences: The neural correlates of musical improvisation. *Neuroimage* 41(2). 535–543.

Berliner, Paul F. 2009. *Thinking in jazz: The infinite art of improvisation*. Chicago: University of Chicago Press.

Bhattacharya, Joydeep & Hellmuth Petsche. 2005. Drawing on mind's canvas: Differences in cortical integration patterns between artists and non-artists. *Human Brain Mapping* 26(1). 1–14.

Boden, Margaret A. 1998. Creativity and artificial intelligence. *Artificial Intelligence* 103(1/2). 347–356.

Boden, Margaret A. 2009. Computer models of creativity. *AI Magazine* 30(3). 23–34.

Booth, Wayne C. 1961. *The rhetoric of fiction*. Chicago: University of Chicago Press.

Bowden, Edward M., Mark Jung-Beeman, Jessica Fleck & John Kounios. 2005. New approaches to demystifying insight. *Trends in Cognitive Sciences* 9(7). 322–328.

Bretan, Mason & Gil Weinberg. 2016. A survey of robotic musicianship. *Communications of the ACM* 59(5). 100–109.

Breton, André. 1924. *Manifeste du surréalisme*. Paris: Éditions du Sagittaire.

Brooks, Cleanth. 1979. The new criticism. *The Sewanee Review* 87(4). 592–607.

Brown, Steven & Ellen Dissanayake. 2009. The arts are more than aesthetics: Neuroaesthetics as narrow aesthetics. In Martin Skov & Oshin Vartanian (eds.), *Foundations and frontiers in aesthetics. Neuroaesthetics*, 43–57. Amityville, NY: Baywood Publishing Co.

Bunge, Mario. 1962. *Intuition and science*. Englewood Cliffs, NJ: Prentice-Hall.

Butcher, Samuel Henry (ed.). 1902. *The poetics of Aristotle: Edited with critical notes and a translation*. London: Macmillan and Co.

Calvin, William H. & Derek Bickerton. 2001. *Lingua ex machina: Reconciling Darwin and Chomsky with the human brain*. Cambridge, MA: MIT Press.

Carter, Ronald. 2004. *Language and creativity: The art of common talk*. London & New York: Routledge.

Chatterjee, Anjan. 2004. The neuropsychology of visual artistic production. *Neuropsychologia* 42(11). 1568–1583.

Chomsky, Noam. 1959. A review of BF Skinner's verbal behavior. *Language* 35(1). 26–58.

Collins, David. 2005. A synthesis process model of creative thinking in music composition. *Psychology of Music* 33(2). 193–216.

Colton, Simon. 2008. Creativity versus the perception of creativity in computational systems. In *AAAI Spring Symposium: Creative Intelligent Systems* 8. 14–20. https://www.aaai.org/Papers/Symposia/Spring/2008/SS-08-03/SS08-03-003.pdf (accessed 25 April 2022).

Colton, Simon. 2011. The painting fool in new dimensions. In Dan Ventura, Pablo Gervás, D. Fox Harrell, Mary Lou Maher, Alison Pease & Geraint Wiggins (eds.), *Proceedings of the Second International Conference on Computational Creativity,* 112. Mexico: Universidad Autónoma Metropolitana & Unidad Cuajimalpa. https://computationalcreativity.net/iccc2011/proceedings/show_and_tell/colton_2_iccc11.pdf (last accessed 26 April 2022).

Conner, Tamlin S. & Paul J. Silvia. 2015. Creative days: A daily diary study of emotion, personality, and everyday creativity. *Psychology of Aesthetics, Creativity, and the Arts* 9(4). 463–470.

Cope, David. 1992. Computer modeling of musical intelligence in EMI. *Computer Music Journal* 16(2). 69–83.

Cope, David. 2005. *Computer models of musical creativity*. Cambridge, MA: MIT Press.

Cropley, David H. 2017. Nurturing creativity in the engineering classroom. In Ronald Beghetto & James C. Kaufman (eds.), *Nurturing creativity in the classroom*, 212–226. New York: Cambridge University Press.

Cross, Ian. 2012. Cognitive science and the cultural nature of music. *Topics in Cognitive Science* 4(4). 668–677.

Csíkszentmihályi, Mihály. 1975. *Beyond boredom and anxiety: Experiencing flow in work and play*. San Francisco: Jossey-Bass.

Csíkszentmihályi, Mihály. 1997. *Flow and the psychology of discovery and invention*. New York: Harper Perennial.

Damasio, Antonio R. 1994. *Descartes' error: Emotion, reason, and the human brain*. New York: G. P. Putnam's Sons.

Damasio, Antonio R. 2001. Some notes on brain, imagination and creativity. In Karl H. Pfenninger & Valerie R. Shubik (eds.), *The origins of creativity*, 59–98. Oxford: Oxford University Press.

Davitz, Joel R. 1969. *The language of emotion*. New York: Academic Press.

Deahl, Dani. 2018. How AI-generated music is changing the way hits are made. The future of music, episode 2. *The Verge*. https://www.theverge.com/2018/8/31/17777008/artificial-intelligence-taryn-southern-amper-music (accessed 31 May 2020).

Dewey, John. 1934. *Art as experience*. New York: Minton, Balch and Company.

Dietrich, Arne. 2003. Functional neuroanatomy of altered states of consciousness: The transient hypofrontality hypothesis. *Consciousness and Cognition* 12(2). 231–256.

Dietrich, Arne. 2004. The cognitive neuroscience of creativity. *Psychonomic Bulletin & Review* 11(6). 1011–1026.

Dissanayake, Ellen. 1974. A hypothesis of the evolution of art from play. *Leonardo* 7(3). 211–217.

Dissanayake, Ellen. 2008. The arts after Darwin: Does art have an origin and adaptive function? In Kitty Zijlmans & Wilfried van Damme (eds.), *World art studies: Exploring concepts and approaches*, 241–263. Amsterdam: Valiz.

Dixon, Thomas. 2012. "Emotion": The history of a keyword in crisis. *Emotion Review* 4(4). 338–344.

Donnay, Gabriel F., Summer K. Rankin, Mónica López-González, Patpong Jiradejvong & Charles J. Limb. 2014. Neural substrates of interactive musical improvisation: An FMRI study of 'trading fours' in jazz. *PLoS one* 9(2). e88665.

Duch, Wlodzislaw. 2007. Intuition, insight, imagination and creativity. *IEEE Computational Intelligence Magazine* 2(3). 40–52.

Ekman, Paul. 1992. An argument for basic emotions. *Cognition and Emotion* 6(3/4). 169–200.

Eliot, Thomas Stearns. 1921. Hamlet and his problems. In Thomas Stearns Eliot (ed.), *The sacred wood: Essays on poetry and criticism*, 87–94. New York: Alfred A. Knopf.

Fedorenko, Evelina & Rosemary Varley. 2016. Language and thought are not the same thing: Evidence from neuroimaging and neurological patients. *Annals of the New York Academy of Sciences* 1369(1). 132–153.

Figlerowicz, Marta. 2012. Affect theory dossier: An introduction. *Qui Parle: Critical Humanities and Social Sciences* 20(2). 3–18.

Fink, Andreas, Barbara Graif & Aljoscha C. Neubauer. 2009. Brain correlates underlying creative thinking: EEG alpha activity in professional vs. novice dancers. *NeuroImage* 46(3). 854–862.

Finke, Ronald A. 1996. Imagery, creativity, and emergent structure. *Consciousness and Cognition* 5(3). 381–393.

Finke, Ronald A., Steven Pinker & Martha J. Farah. 1989. Reinterpreting visual patterns in mental imagery. *Cognitive Science* 13(1). 51–78.

Finke, Ronald A., Thomas B. Ward & Steven M. Smith. 1992. *Creative cognition: Theory, research, and applications*. Cambridge, MA: MIT Press.

Fish, Stanley E. 1976. Interpreting the "Variorum". *Critical Inquiry* 2(3). 465–485.

Fontaine, Johnny R. J., Klaus R. Scherer, Etienne B. Roesch & Phoebe C. Ellsworth. 2007. The world of emotions is not two-dimensional. *Psychological Science* 18(12). 1050–1057.

Frijda, Nico H. 1988. The laws of emotion. *American Psychologist* 43(5). 349–358.

Fuster, Joaquin M. 1995. Temporal processing. *Annals of the New York Academy of Sciences* 769(1). 173–182.

Gardner, Howard. 2011. *Creating minds: An anatomy of creativity seen through the lives of Freud, Einstein, Picasso, Stravinsky, Eliot, Graham, and Gandhi*. New York: Basic Civitas Books.

Gaut, Berys. 2007. Emotion and imagination. In Berys Gaut (ed.), *Art, emotion and ethics*, 203–226. New York: Oxford University Press.

Gero, John S. 1996. Creativity, emergence and evolution in design. *Knowledge-Based Systems* 9(7). 435–448.

Glaveanu, Vlad, Todd Lubart, Nathalie Bonnardel, Marion Botella, Pierre-Marc de Biaisi, Myriam Desainte-Catherine, Asta Georgsdottir, Katell Guillou, Gyorgy Kurtag, Christophe Mouchiroud, Martin Storme, Alicja Wojtczuk & Franck Zenasni. 2013. Creativity as action: Findings from five creative domains. *Frontiers in Psychology* 4. 176.

Goguen, Joseph A. 2000. What is art? Editorial introduction. *Journal of Consciousness Studies* 7(8/9). 7–16.

Grice, Herbert Paul. 1975. Logic and conversation. In Peter Cole & Jerry L. Morgan (eds.), *Syntax and semantics 3: Speech arts*, 41–58. New York: Academic Press.

Gruszka, Aleksandra & Edward Necka. 2002. Priming and acceptance of close and remote associations by creative and less creative people. *Creativity Research Journal* 14(2). 193–205.

Guilford, J. Paul. 1950. Creativity. *American Psychologist* 5(9). 444–454.

Guilford, J. Paul. 1956. The structure of intellect. *Psychological Bulletin* 53(4). 267–293.

Guilford, J. Paul. 1957. Creative abilities in the arts. *Psychological Review* 64(2). 110–118.

Henrich, Joseph, Steven J. Heine & Ara Norenzayan. 2010. The weirdest people in the world? *Behavioral and Brain Sciences* 33(2/3). 61–83.

Herculano-Houzel, Suzana. 2016. *The human advantage: A new understanding of how our brains became remarkable*. Cambridge, MA: The MIT Press.

Hogan, Patrick Colm. 2016. Affect studies and literary criticism. *Oxford Research Encyclopedia of Literature*, 1–33. DOI: 10.1093/acrefore/9780190201098.013.105.

Howard-Jones, Paul A., Sarah-Jayne Blakemore, Elspeth A. Samuel, Ian R. Summers & Guy Claxton. 2005. Semantic divergence and creative story generation: An fMRI investigation. *Cognitive Brain Research* 25(1). 240–250.

Hunter, Patrick G. & E. Glenn Schellenberg. 2010. Music and emotion. In Mari Riess Jones, Richard R. Fay & Arthur N. Popper (eds.), *Music perception*, 129–164. New York: Springer.

Iser, Wolfgang. 1972. The reading processing: A phenomenological approach. *New Literary History* 3(2). 279–299.

Izard, Carroll E. 2010. The many meanings/aspects of emotion: Definitions, functions, activation, and regulation. *Emotion Review* 2(4). 363–370.

Jacobs, Arthur M. & Roel M. Willems. 2018. The fictive brain: Neurocognitive correlates of engagement in literature. *Review of General Psychology* 22(2). 147–160.

James, William. 1884. What is an emotion? *Mind* 9(34). 188–205.

Jones, Robert S. P. 2017. Language, form and emotion in James Joyce's *Portrait of an Artist as a Young Man*: A literary analysis. *Advances in Language and Literary Studies* 8(5). 158–163.

Jung, Rex E., Judith M. Segall, H. Jeremy Bockholt, Ranee A. Flores, Shirley M. Smith, Robert S. Chavez & Richard J. Haier. 2010. Neuroanatomy of creativity. *Human Brain Mapping* 31(3). 398–409.

Jung-Beeman, Mark, Edward M. Bowden, Jason Haberman, Jennifer L. Frymiare, Stella Arambel-Liu, Richard Greenblatt, Paul J. Reber & John Kounios. 2004. Neural activity when people solve verbal problems with insight. *PLoS biology* 2(4). e97.

Kopiez, Reinhard. 2011. The music child prodigy (wunderkind) in music history: A historiometric analysis. In Irène Deliège, Jane Davidson & John A. Sloboda (eds.), *Music and the mind: Essays in honour of John Sloboda*, 225–236. Oxford: Oxford University Press.

Limb, Charles J. & Allen R. Braun. 2008. Neural substrates of spontaneous music performance: an fMRI study of jazz improvisation. *PLoS one* 3(2). e1679.

Liu, Siyuan, Ho Ming Chow, Yisheng Xu, Michael G. Erkkinen, Katherine E. Swett, Michael W. Eagle, Daniel A. Rizik-Baer & Allen R. Braun. 2012. Neural correlates of lyrical improvisation: An fMRI study of freestyle rap. *Scientific Reports* 2. 834.

López-González, Mónica. 2014. *Última Partida / The Final Draw – A play in one act*, 1st bilingual Spanish-English edn. Baltimore: La Petite Noiseuse Productions Publisher.

López-González, Mónica. 2015a. *In Session / Chez L'Analyste – A play in one act*, 1st bilingual English-French edn. Baltimore: La Petite Noiseuse Productions Publisher.

López-González, Mónica. 2015b. Cognitive psychology meets art: exploring creativity, language, and emotion through live musical improvisation in film and theatre. *Human Vision and Electronic Imaging XX* 9394. https://doi.org/10.1117/12.2083880 (accessed 14 April 2022).

López-González, Mónica. 2016a. *Framed Illusion / Cornice Di Un'Illusione – A play in one act*, 1st bilingual English-Italian edn. Baltimore: La Petite Noiseuse Productions Publisher.

López-González, Mónica. 2016b. Minds in the spotlight: Using live performance art to uncover creative thinking processes. *Proceedings for IS&T International Symposium on Electronic Imaging: Human Vision and Electronic Imaging* 28(16). 1–10. https://doi.org/10.2352/ISSN.2470-1173.2016.16.HVEI-143 (accessed 14 April 2022).

López-González, Mónica. 2017a. Trading conversations between science and art: When musical improvisation enters the dialogue on stage. *Proceedings for IS&T International Symposium on Electronic Imaging: Human Vision and Electronic Imaging* 29(14). 273–284. https://doi.org/10.2352/ISSN.2470-1173.2017.14.HVEI-156 (accessed 14 April 2022).

López-González, Mónica. 2017b. For female leaders of tomorrow: Cultivate an interdisciplinary mindset. *IEEE Women in Engineering (WIE) Forum USA East*, 1–6. https://doi.org/10.1109/WIE.2017.8285606 (accessed 14 April 2022).

López-González, Mónica. 2018a. Theoretically automated conversations: Collaborative artistic creativity for autonomous machines. *Proceedings for IS&T International Symposium on Electronic Imaging: Human*

Vision and Electronic Imaging 30(14). 1–8. https://doi.org/10.2352/ISSN.2470-1173.2018.14.HVEI-531 (accessed 14 April 2022).

López-González, Mónica. 2018b. Storyboard of thoughts: Using photography and illustration to visualize the mind. *Proceedings for IS&T International Symposium on Electronic Imaging: Human Vision and Electronic Imaging* 30(14). 1–7. https://doi.org/10.2352/ISSN.2470-1173.2018.14.HVEI-540 (accessed 14 April 2022).

López-González, Mónica. 2019. Today is to see and know: An argument and proposal for integrating human cognitive intelligence into autonomous vehicle perception. *Proceedings for IS&T International Symposium on Electronic Imaging: Autonomous Vehicles and Machines* 31(15). 1–9. https://doi.org/10.2352/ISSN.2470-1173.2019.15.AVM-054 (accessed 14 April 2022).

López-González, Mónica. 2020. Regaining sight of humanity on the roadway towards automation. *Proceedings for IS&T International Symposium on Electronic Imaging: Autonomous Vehicles and Machines* 32(16). 1–5. https://doi.org/10.2352/ISSN.2470-1173.2020.16.AVM-088 (accessed 14 April 2022)

Loui, Psyche. 2018. Rapid and flexible creativity in musical improvisation: Review and a model. *Annals of The New York Academy of Sciences* 1423. 138–145.

Ludmer, Rachel, Yadin Dudai & Nava Rubin. 2011. Uncovering camouflage: Amygdala activation predicts long-term memory of induced perceptual insight. *Neuron* 69(5). 1002–1014.

Man, Paul de. 1971. *Blindness and insight*. New York: Oxford University Press.

Manzano, Örjan de & Fredrik Ullén. 2012. Goal-independent mechanisms for free response generation: Creative and pseudo-random performance share neural substrates. *Neuroimage* 59(1). 772–780.

May, Jon, Beatriz Calvo-Merino, Scott Delahunta, Wayne McGregor, Rhodri Cusack, Adrian M. Owen, Michele Veldsman, Cristina Ramponi & Philip Barnard. 2011. Points in mental space: An interdisciplinary study of imagery in movement creation. *Dance Research* 29(supplement). 404–432.

McPherson, Malinda J., Frederick S. Barrett, Mónica López-González, Patpong Jiradejvong & Charles J. Limb. 2016. Emotional intent modulates the neural substrates of creativity: An fMRI study of emotionally targeted improvisation in jazz musicians. *Scientific Reports* 6. 18460.

Mesquita, Batja & Nico H. Frijda. 1992. Cultural variations in emotions: A review. *Psychological Review* 112(2). 179–204.

Meyer, Leonard B. 1956. *Emotion and meaning in music*. London: University of Chicago Press.

Miall, David S. & Don Kuiken. 1994a. Beyond text theory: Understanding literary response. *Discourse Processes* 17. 337–352.

Miall, David S. & Don Kuiken. 1994b. Foregrounding, defamiliarization, and affect response to literary stories. *Poetics* 22. 389–407.

Miller, Bruce L. & Craig E. Hou. 2004. Portraits of artists: Emergence of visual creativity in dementia. *Archives of Neurology* 61(6). 842–844.

Mithen, Steven. 2005. *The singing Neanderthals: The origins of music, language, mind and body*. London: Weidenfeld & Nicolson.

Mumford, Michael D., Michele I. Mobley, Roni Reiter-Palmon, Charles E. Uhlman & Lesli M. Doares. 1991. Process analytic models of creative capacities. *Creativity Research Journal* 4(2). 91–122.

Ness, Roberta. 2013. *Genius unmasked*. New York: Oxford University Press.

Newell, Allen, J. Clifford Shaw & Herbert Alexander Simon. 1962 [1959]. The processes of creative thinking. In Howard E. Gruber, Glenn Terrell, & Michael D. Wertheimer (eds.), *Contemporary approaches to creative thinking: A symposium held at the University of Colorado*, 63–119. New York: Atherton Press.

Newell, Allen & Herbert Alexander Simon. 1972. *Human problem solving*. Englewood Cliffs, NJ: Prentice-Hall.

Oatley, Keith. 1994. A taxonomy of the emotions of literary response and a theory of identification in fictional narrative. *Poetics* 23(1/2). 53–74.

Oatley, Keith. 2011. In the minds of others. *Scientific American Mind* 22(5). 62–67.

O'Sullivan, Simon. 2001. The aesthetics of affect: Thinking art beyond representation. *Angelaki: Journal of Theoretical Humanities* 6(3). 125–135.

Pang, Weiguo. 2015. Promoting creativity in the classroom: A generative view. *Psychology of Aesthetics, Creativity, and the Arts* 9(2). 122–127.

Pask, Gordon. 1976. *Conversation theory: Applications in education and epistemology*. Amsterdam: Elsevier.

Plato. 2008 [380 BCE]. *Ion*. Translated by Benjamin Jowett. The Project Gutenberg EBook. https://www.gutenberg.org/files/1635/1635-h/1635-h.htm (accessed 14 April 2022).

Posner, Michael I. 1994. Attention: The mechanisms of consciousness. *Proceedings of the National Academy of Sciences* 91(16). 7398–7403.

Radford, Mike. 2004. Emotion and creativity. *Journal of Aesthetic Education* 38(1). 53–64.

Rice, Jenny Edbauer. 2008. The new "new": Making a case for critical affect studies. *Quarterly Journal of Speech* 94(2). 200–212.

Rosenblatt, Louise M. 1985. The transactional theory of the literary work: Implications for research. In Charles R. Cooper (ed.), *Research response to literature and the teaching of literature: Points of departure*, 33–53. Norwood, NJ: Ablex Publishing.

Sandkühler, Simone & Joydeep Bhattacharya. 2008. Deconstructing insight: EEG correlates of insightful problem solving. *PLoS one* 3(1). e1459.

Sawyer, R. Keith. 2003. *Group creativity: Music, theater, collaboration*. Mahwah, NJ: Lawrence Erblaum Associates.

Sawyer, R. Keith. 2011. *Structure and improvisation in creative teaching*. Cambridge: Cambridge University Press.

Shah, Carolin, Katharina Erhard, Hanns-Josef Ortheil, Evangelia Kaza, Christof Kessler & Martin Lotze. 2013. Neural correlates of creative writing: An fMRI study. *Human Brain Mapping* 34(5). 1088–1101.

Simonton, Dean Keith. 2000. Creativity, cognitive, personal, developmental, and social aspects. *American Psychologist* 55(1). 151–158.

Sloboda, John A. (ed.). 1988. *Generative processes in music: The psychology of performance, improvisation, and composition*. New York: Oxford University Press.

Solso, Robert L. 2001. Brain activities in a skilled versus a novice artist: An fMRI study. *Leonardo* 34(1). 31–34.

Stewart, Justice Potter. 1964. 378 U. S. 184 (Justice Stewart concurring in Jacobellis v. Ohio).

Stiles, Anne. 2009. Literature in "mind": H. G. Wells and the evolution of the mad scientist. *Journal of the History of Ideas* 70(2). 317–339.

Thompson, William Forde. 2009. Music and emotion. In William Forde Thompson (ed.), *Music, thought, and feeling: Understanding the psychology of music*, 119–150. New York: Oxford University Press.

Thompson, William Forde & Laura-Lee Balkwill. 2010. Cross-cultural similarities and differences. In Patrik Juslin & John Sloboda (eds.), *Handbook of music and emotion: Theory, research, applications*, 755–788. Oxford: Oxford University Press.

Tolstoy, Lev Nikolayevich. 1925 [1898]. What is art? In Aylmer Maude (ed.), *Tolstoy on art*, 117–357. London: Oxford University Press.

Trainor, Jennifer Seibel. 2006. From identity to emotion: Frameworks for understanding, and teaching against, anticritical sentiments in the classroom. *JAC* 26(3/4). 643–655.

Tsuchiya, Naotsugu & Ralph Adolphs. 2007. Emotion and consciousness. *Trends in Cognitive Sciences* 11(4). 158–167.

Turing, Alan M. 1950. Computing machinery and intelligence. *Mind* 59(236). 433–460.

Ward, Steven M., Thomas B. Smith & Ronald A. Finke (eds.). 1995. *The creative cognition approach*. Cambridge, MA: MIT Press.

Zara, Christopher. 2012. *Tortured artists: From Picasso and Monroe to Warhol and Winehouse, the twisted secrets of the world's most creative minds*. Avon, MA: Simon and Schuster.

Zhou, Jing & Christina E. Shalley. 2011. Deepening our understanding of creativity in the workplace: A review of different approaches to creativity research. In Sheldon Zedeck (ed.), *APA handbook of industrial and organizational psychology, Vol. 1: Building and developing the organization*, 275–302. Washington, DC: American Psychological Association.

Zillmann, Dolf. 1988. Mood management through communication choices. *American Behavioral Scientist* 31(3). 327–340.