



creativity

in arts, science and technology

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Creativity

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Guest Editor
Fredricka Reisman, PhD

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CHAPTER TWELVE

CREATIVE INHIBITION: HOW AND WHY

PETER LENNOX, CHRIS WILSON & MICHAEL BROWN

Abstract

The aim in this chapter is to develop discourse on how we think (consciously or subconsciously) about creativity, how we treat it, why we do so and whether we are behaving toward creativity to the best of our ability. The proposal is that rational inquiry can build on what has been achieved by intuitive thinking.

It is almost axiomatic that the people who most often say the word “creative” are not the most creative; the corollary is that the most creative people find the least occasion to use the word. Talking about the job is not *doing* the job. For very creative people, creativity isn’t a subject, it’s imbued in the very fabric of their universe; it doesn’t need external validation, it is its own reason. For the rest of us, it is as though we are color blind—we understand intellectually what people are talking about, but we don’t, deep down, *feel* it. If we did, we wouldn’t have to talk about it. Yet, there is an advantage in this; necessity is the mother of invention. That which we do not easily understand through intuition, drives us to seek rational understanding.

Keywords: Creativity, routine, inhibition, discipline, productivity, flow

Introduction

It is notoriously problematic to rationalize creativity; creativity is ubiquitous yet elusive. It is difficult to study in the laboratory, and the science of creativity is correspondingly underdeveloped; we know little of the origin, causal mechanisms, and influencing factors.

We do observe that it is not homogenous, being *more* or *less* present in different individuals, organizations and societies. But we can’t, with certainty, declare that it is increasing; we have no way of measuring that. It could simply be that is increasingly *talked* about as an increasingly legitimate target for scientific inquiry. But the literature on creativity is asymmetric; those who are interested in the topic are overwhelmingly affirmative concerning the

benefits and desirability of encouraging creativity. There are few dissenting voices; those who find the topic uninteresting don't research and write about it. If there are actually substantive reasons for impeding creativity, we should examine them. Uncritical endorsement adds little to any rational debate.

The inquiry here is contextualized in fifteen hypotheses:

- Hypothesis 1: Creativity could be logically defined
- Hypothesis 2: Creativity is logically intractable
- Hypothesis 3: Creativity could be measured
- Hypothesis 4: Creativity is intrinsically qualitative and immune to measurement
- Hypothesis 5: Creativity is indeterministic through-and-through and is therefore ineffable.
- Hypothesis 6: Creativity is partially or wholly deterministic and therefore potentially predictable
- Hypothesis 7: Creativity can bring about circumstances not accessible by any other means
- Hypothesis 8: Creativity is amenable to manipulation
- Hypothesis 9: The products of creativity constitute a net gain for the population at large
- Hypothesis 10: Creativity benefits the individual
- Hypothesis 11: Creativity may come at a cost to society
- Hypothesis 12: Creativity might entail a net cost to the individual
- Hypothesis 13: Creativity has a moral dimension
- Hypothesis 14: There are significant interactions between environment and creativity
- Hypothesis 15: Organizations and societies need, but do not *cause* or *own* creativity

These hypotheses are, in theory, testable. The purpose of this chapter is to elucidate the degree to which evidence is currently available, with the aim of anticipating useful lines of enquiry.

Defining characteristics of creativity

Hypothesis 1: Creativity could be logically defined

Hypothesis 2: Creativity is logically intractable

Creativity is a nebulous concept; subscribed to by many more people than can actually define it. This is hardly surprising, since creativity begets many fruit that are equally resistant to clear definitions. Art, music, poetry and ideas are slippery subjects that we all use in conversation; we 'know' what we mean, yet definitions are laborious, often failing to capture the 'essence', leading to endless disputations.

Consequently, most of us settle on rough-and-ready concepts that serve well enough (disputations notwithstanding) for everyday purposes. This yields utilitarian definitions whereby the defining characteristics concern the *uses* to which we might put creativity. So, in business, creativity is that which yields innovation; if innovation happens, it must (in part) be due to creativity and creativity must lead to innovation (otherwise, it's not creativity). So that's a 'circular definition', then. In education, creativity might be associated with healthy cognitive development, self-expression and self-esteem, but what it *is*, is equally nebulous.

Many associated concepts feature ideas, imagination, problem solving, originality/novelty and benefit. Definitions-by-association of 'creativity' are helpful to an extent, but don't take us far into understanding the cognitive mechanisms involved. Utilitarian approaches tend to focus on the desired associated characteristic, so that if problem solving is the goal, then the degree of creativity is measured according to task-oriented success. Creativity in the music industry is often strongly correlated with commercial success, which can lead to the paradox that, as is often the case, the most innovative music is of the least commercial value whilst music that stays within a genre, pushing the creative envelope only slightly, is lauded by the creative industry.

"In practice, if you were asked which phenomenon is the defining criterion and which is a symptom, you would in most cases be unable to answer this question except by making an arbitrary decision ad hoc."

—Dreyfus (1992, p. 124)

The consequences of the variations in definition (of creativity) are various: focusing on one particular definition may mean that something is being missed, or confounding factors are inadvertently included. Utility-flavored definitions have the advantage of task-oriented specialization. Definition-by-associate characteristics can mean that, in the absence of one or more such characteristics, some instantiations of creativity could be disqualified.

This all doesn't mean that creativity is wholly logically intractable, nor that the field is 'vague', merely that it is more finely nuanced than we can currently rationalize. It may simply mean that a single definition cannot meet all criteria. An analogous situation pertains with the definition of music [REF]. These are situations where human thought currently has the advantage over computer symbolic representation.

Broad approaches, encompassing as many characteristics as possible, might be:

"The ability or quality displayed when solving hitherto unsolved problems, when developing novel solutions to problems others have solved differently, or when developing original and novel (at least to the originator) products"

— Parkhurst (1999, p. 18)

Or:

“...a process of becoming sensitive to problems, deficiencies, gaps in knowledge, missing elements, disharmonies, and so on; identifying the difficulty; searching for solutions, making guesses, or formulating hypotheses about the deficiencies: testing and retesting these hypotheses and possibly modifying and retesting them; and finally communicating the results.”

— Torrance (1966, p. 6)

For a review of definitions of creativity, including historic perspectives, see (Runco and Jaeger, 2012).

Measuring creativity

Hypothesis 3 Creativity could be measured

Hypothesis 4: Creativity is intrinsically qualitative and immune to measurement

Given the problems with defining what is to be measured, creativity measurements are likely to be task or domain specific.

Of course, there are many tests that more narrowly focus on an associate characteristic, such as ‘divergent thinking’ or ‘fluency of ideas’. ‘Thinking outside the box’ (being able to consider a problem without unconscious acceptance of unspoken rules) is a favorite term. However, it usually really means ‘only just outside the box’ and if an overenthusiastic workshop participant graffitied the boardroom or debagged the managing director, this would not generally be regarded as usefully divergent thinking. Jarlsberg (a kind of Scandinavian cheese associated with overt conformism but covert anarchic or individualistic tendencies) has been used (by young inhabitants of the Norwegian village of Å, Sundal, 2012) as a slang metaphor that typifies the ‘bottled up’ type of rebelliousness associated with ‘out of the box- but not straying too far’ thinking.

Hence, tests of creativity are generally goal-oriented tests of the evidence of creativity, rather than operating directly on creativity itself. This is also unsurprising, since our record for establishing test representativeness (the degree to which a given test or experimental design correlates with the target ‘real life’ situation) is poor (Brunswik 1942, 1953, 1956).

The more robust methods involve using diverse test methods:

Both Torrance (Treffinger, 1985) and Cropley (2000) suggested that, considering the multidimensional nature of the creativity concept, assessments should be based on several tests, rather than relying on a single score (Hee Kim, 2006).

Though how these are to be aggregated so as to address the representativeness issue is unclear. The Torrance test was designed to identify strength-and-weakness profiles of creative potential in children, and so has particular relevance to education in the context of maximizing individuals’ opportunities.

Tests of scientific creativity, such as C-SAT (Ayas and Sak, 2014) focus on domain-specific testing that naturally takes in measures of fluency in associated domains, such as mathematics, evidence-evaluation, hypothesis generation and so on.

Overall, measurement of creativity is a developing field. Most evaluation operates at the individual level, but there are moves to develop reliable quantitative measures at the organizational level. These might usefully elucidate characteristics of the environment in which the individual operates.

Big creativity, little creativity

Whilst we might loosely assume that creativity is the province of creative professionals and industries, such a narrow view is unwarranted. In everyday life, individuals' sense of humor, devising of novel solutions and ingenious pastimes all indicate appetite and capacity for creativity. This 'amateur creativity' probably dwarfs the professional variety in terms of innovation. Considering how people constructively misuse whatever technology they are given is instructive. DJs developed whole genres of music around misusing the record deck. Watching teenage boys explore every possible 'wrong' way to utilize wheels (if presented with a two-wheeled vehicle, they will try to use only one, a four-wheeled skateboard- they will try to use none, sliding down handrails) one is struck by how many innovations begin, not through a logical design process, but by 'grass roots' (and often unwise) experimentation, representing an iterative sequence of *small-creative* acts (Kaufman et al, 2015) often building cumulatively.

Scientists engage in painstaking, methodical and rational activities, but also report intuitions, inspirations and 'eureka moments'. In fact, science is how one tests hypotheses but not how one generates them (Popper 1963 p. 53). The having of an idea is not rational; the testing of it is. The bringing together of apparently logically unrelated ingredients to synthesize something unexpected brings great delight and we seem evolutionarily disposed toward it.

Philosophy and creativity

Hypothesis 5: Creativity is indeterministic through-and-through and is therefore ineffable.

Hypothesis 6: Creativity is partially or wholly deterministic and therefore runs on (potentially) predictable mechanisms

The difficulty with philosophical position of 'strong indeterminism' (Popper 1990) is that it is indistinguishable from randomness. This would mean that we cannot talk cogently about creativity – essentially, it would be akin to 'magic chaos', a divine madness that only fortuitously ever provided any benefits, but would probabilistically tend to cause harm and

disruption. Although this doesn't accord with our experience, it is not incompatible with the view that creativity, by itself, might indeed be chaotic. Fortunately we have cognitive constraint mechanisms that can ameliorate fanciful excess (see Flaherty 2005). This latter point does not expunge the possibility of chaotic elements in creativity, but does show that they can be controlled and therefore utilized.

In the strong determinism position, creativity is actually entirely rational—that is, it is logical, systematic and in theory (given sufficient computational resources) could be predicted and replicated. In this view, creativity is currently ill defined because of insufficient data, not because it is intrinsically partially non-rational. This position would imply, for instance, that with enough 'brute force' computational power, a logical symbol-manipulation system could provide precisely what a human brain achieves. It cannot, however, be logically proven before the fact.

In the philosophical positions of 'weak determinism' (or 'weak indeterminism') some causal factors that can theoretically be predicted, along with some ingredients that are probabilistic and not amenable to precise prediction. In other words, there are definable causal relationships, but the predictability of outcomes is partially confounded by some chance elements.

Overall, the only theoretical stance that can be discounted is that of strong indeterminism, the 'magic-and-ineffable' explanation. This is rejected on the basis that, if creativity were entirely chaotic, it would be immune to cognitive constraint. The strong determinate proposition, although not disproven is not a good candidate since it implies cunningly concealed strong cognitive computation along entirely logical lines, which seems to leave out the evidence that the human brain outperforms what we know of computability in the face of massively impoverished data.

Cognition and creativity

Hypothesis 7: Creativity can bring about circumstances not accessible by any other means.

Hypothesis 8: Creativity is epiphenomenal – it is caused by the structure of the brain, but does no causing

Creativity and 'everyday perception' (everyday, but nonetheless miraculous) are strongly related, utilizing similar processing mechanisms. Perception requires, beyond sensory processing, a workable reckoning of items not currently represented in sensation.

"...the general law of perception... that whilst part of what we perceive comes through our senses from the object before us, part (and it may be the larger part) always comes ... out of our own head."

— James (1890, Vol II, p. 103)

The challenge to organic perception is the classic one of 'signal-to-noise ratio'. The torrent of real-time incoming sense data has to be processed so

that salient features are extracted for cognition and (currently) non-salient features discarded. This management of cognitive resources is known as ‘selective attention’, and runs according to ‘cognitive schemata’. The organism with the better cognitive schemata stands the better chance of survival. Hence, perception utilizes memory, imagination and the capacity to generate hypotheses about causal relationships: ideas.

The counterfactual nature of perception and ideas

We tend to think of perception as ‘knowing what is’, but this view obscures the real benefit of perception, and the real nature of competition in perception. It would be better to think of perception as essentially future oriented. The contents of perception predict by having ideas about the future – and not simply what will be, but what seriously shouldn’t be. In other words, we cognitively model ranges of possible consequences (of action or inaction) in order to behave to best advantage. Hence, perception contains much that is necessarily fictional, that is, counterfactual (Gopnik 1996). The richness of our counterfactual ideas accounts for how we have managed to gain ascendancy over other species, many of which are faster, more powerful and have better sensory acuity. Better quality prediction is like time-travel – it can outpace the fastest reactions.

The story of human evolution is the story of the development of creativity. The evolution of larger brain size, facilitated by neoteny –prolonged immaturity allowing for a prolonged learning period (Mehmet Somel et al 2009) led to behavioral capacities offering competitive advantage. Chiefly, these consisted of abilities to affect the surrounding environment; individuals could anticipate, manipulate, avert unfavorable, and select favorable, circumstances (at least, better than the competitors could). What was being evolved was imagination, a flawed but powerful capacity for modelling the range of possible futures.

Organic intelligence and creativity go hand-in-hand, because rational processes alone cannot ‘bootstrap’. The human brain uses 13-20 watts (estimates vary), which is about 20% of the body’s total power consumption and a significant ‘evolutionary investment’. Speculative estimates on what it would take to model human brain function using current technologies range from 10 megawatts (Benjamin et al 2014) to half a gigawatt (Markram, H. 2012) – half a million to twenty five million times as much. Clearly, heat would be a problem. In organic evolutionary terms, so too would the necessity of finding appropriate food stores before competitive advantage could be secured.

Hubert Dreyfus (1972, 1979, 1982, 1992) critiqued methods in artificial intelligence (AI) elucidating how and why computing qualitatively differs from ‘thinking’. Fundamentally, the structural differences play out in differences in semantics. The computer is constrained to rational operations,

whereas the brain absolutely requires non-rational operations for proper function.

Hence, 'insight', 'intuition' 'hunch', 'creativity' can be considered evidence of 'processing shortcuts' that allow us to cognitively utilize incomplete data. This 'quick-and-dirty' processing allows us to jump to rough and ready conclusions even when the whole picture is not clear, in timely (for survival needs) fashion. Being able to outguess competitors is advantageous. Similar processes may underpin unexpected metaphorical connotations, leading to illogical-but-charming poetry, music and pictures.

Intuitions are often plain wrong (see Kahneman, 2003, 2011) and can stubbornly resist logical attempts to correct them. The study of cognitive biases attests to the ubiquity and pervasiveness of such biases. Nevertheless, creative cognitive characteristics such as insight, intuition, hunch, inspiration are useful, as long as they are not the only ways we think. More importantly, as Kahneman has found, we often think we are being rational, when in fact we are simply using post hoc pseudo-rational explanations to justify a conclusion we reached entirely intuitively. Most interpersonal conflicts stem from this state of affairs.

But humans are reaching the understanding of the need for using the appropriate kind of cognition for the task - intuitive when logical shortcuts are required, logic to rationalize and correct; we now have even created computers to do that 'rational legwork'.

To sum up:

- Perception involves imagination (counterfactuals) – identical to creativity
- Evolution of capacity for metaphor: language. That dog' (fairly concrete) 'dog' (general, abstract)', some dogs could come (more abstract)
- Capacity for elaboration of metaphor: 'stick', 'stick that can be useful' (tool using) 'stick-that-could-be-weapon-if-I-sharpened-it': tool invention
- Cognitive associationism (metaphorical conflation: what happens if I stick this association with that one?)
- Creativity= idea –elaborate-evaluate-model consequences (counterfactuals again), judge. Reiterate.

A nuanced view of cognition and creativity features radically different types of processing, with checks and balances. Fundamentally the brain achieves what it does, with parsimonious power consumption, because it combines 'mad' associationist metaphorical representation with more literal symbolic representation in an elegant dance of opposing forces. Unbridled creativity would be harmful and useless. Stringent rationality would on the evidence to date, be inadequate (not to mention, boring).

The evidence against the epiphenomenal hypothesis and for the essential utility of creativity is extensive, but circumstantial.

Manipulating creativity (for fun and profit)

Human history could be viewed from the perspective of the continual tendency to manipulate creativity, and this rests on an implicit hypothesis:

Hypothesis 9: Creativity is amenable to manipulation (and this could be in the positive or negative dimension)

Even given that we don't wholly know what we are doing, there have been many attempts to understand creativity, most predicated on the premise that as creativity is good, more would be better. Indeed, if we can manipulate it, we may understand it better which takes us beyond simply having more of it, to using it more wisely.

Historical perspective

Plato (1961) thought that inspiration was a kind of 'divine madness' and divinely inspired oracles were an accepted part of the reality of life, as was magic. We have a long history of endeavoring to attract the muse, using drugs and rituals to initiate trance states and possession by spirits and/or gods (not all of whom were necessarily benevolent). Rituals and practices involving altered mental states pervade; the documented history of the birth of civilizations features ceremonial spaces, artefacts and, of course, music. The role of ancient artefacts, symbolic decorations, rituals, ceremonial spaces and activities in the development of modern man is a core subject of archaeological research.

In archeacoustics, there is a conjecture that the acoustic properties of many ancient ceremonial sites were not entirely accidental, but were tuned or chosen to resonate at the lower frequencies produced by male voices in drones or chants (Watson, 2006; Devereux, 2001) to produce otherworldly effects. Reznikoff (2006) thinks that the early cave paintings are, not coincidentally, sited at the positions where the reverberant acoustic effects of the caves are strongest and most psychologically effective.

In a sense, the birth of the 'creative industries' (used to manipulate human perception) is closely associated with development of civilization. In recorded history we have spent disproportionate time and energy on awe-inspiring buildings, music and paintings. The most complex advanced technologies were devoted to erecting impressive temples, decorated with lavish symbols. These artificial environments, in addition to utilitarian principles, were designed for manipulation of individuals' inner cognitive states through manipulation of environment.

Methods of manipulating inner cognitive states of individuals and groups, whether aimed at creativity or not, became more systematic in the last three

centuries. From the proto-hypnosis techniques of Mesmer in the 18th century and the application of Sigmund Freud's psychoanalytical theories by his nephew Edward Bernays to the issues of mass marketing [Bernays, 1923, 1929], techniques have become steadily more sophisticated. Many of the applications of these techniques are akin to propaganda and brainwashing, only indirectly related to the issue of creativity. But the principle that subconscious or preconscious cognitive processing (Dixon, 1971, 1981) can be altered by manipulation is relevant to the issue of whether such techniques can indeed be used in conjunction with creative practice.

There's an important lesson here: the creativity enhancement industry has a long track record of purportedly selling creativity, whilst actually being involved in techniques of control. This is anomalous because, whilst one facet of creativity is its intrinsic un-tameability, the dark side of these techniques seem dedicated to the exact opposite. Hence, we also have a long history of folklore bogeymen that utilize 'powers' of suggestion, from witchdoctors and the 'evil eye', through Voodoo, Dracula, cults, brainwashing and subliminal advertising. Interesting is the ubiquity of the archetype of the individual robbed of volition, in zombies, Dracula's victims and mindless consumers. Although there is more fiction than fact in these archetypal stories, their omnipresence indicates the distrust with which we view psychological manipulation techniques. It's as though the very loss of rational control that (we feel) we need to engender creativity is something we fear; this may account for the strong current of opinion that creativity is, or should be, a highly individual enterprise.

Creativity extinction events

Arguably, no amount of advanced civilization has ultimately withstood catastrophic depredations. Creativity is delicate in respect of environmental circumstances. Whilst material superfluity may actually blunt necessity, hand-to-mouth existence starves it.

Creativity extinction events are numerous through documented history: Ancient Egypt, Ancient Greece, the Song dynasty; civilizations that had seeded, incubated and grown creativity have frequently been extinguished. These civilizations commonly featured advanced engineering, decorous cities, sophisticated art, accumulated knowledge and excellent quality of life for many of their citizens.

The overarching question is this: can creativity, as a fundamental ingredient of human makeup, ever lead or contribute to a societal stability that promises fulfilment for all its citizens and is fundamentally resistant to the range of possible threats? Can we advance our way out of danger?

The evidence is that creativity is amenable to manipulation; it can be inculcated or extinguished. However, the science and ethics of creativity manipulation offer great scope for development.

For creativity:

There are terms most often used when considering how to increase creativity, such as: inspire, encourage, stimulate, nurture, cultivate. These are all catalytic terms rather than causal terms. We intuit that we can't quite cause creativity but only provide environmental ingredients that can allow it to flourish, as though creativity is some kind of spore that must find hospitable conditions in which to become established.

The fact is that many people may want to be more creative, but never quite find the time and energy. It's that tension between urgency and importance; the important matters get continually put to the back of the queue, crowded out by the urgent ones. The modern workplace involves little inspirational stimulus, much administrative bureaucracy, is tiring and time-consuming. There are few opportunities for creativity, idea-generation or playing. No one pays people to sit around idly thinking. Since our education system is predicated on preparing people for employment, the classroom is similar, and a production line system with standardized benchmarks for class size and attainment could not, by any stretch of the imagination, be considered 'individualized'. Straw polls (by the authors) reveal that 85-90% of our students express a strong desire to develop creatively, and to find employment that involves considerable creativity. In reality, for most of us, a very small percentage of time in gainful employment will offer opportunity for creative mental activity. Is diminished creativity the price of maturity?

Readers of creativity literature will be familiar with the range of putative benefits, so we will not explore in depth here. Broadly, they are in accordance with two hypotheses:

Hypothesis 10: The products of creativity constitute a net gain for the population at large:

- Ingenious solutions (bringing benefits to public wellbeing)
- Competitive advantages (the 'arms race' theory of evolution)
- Enrich experience (beyond the basics, humans have needs for decorative and entertaining aspects of civilization)

Hypothesis: Creativity benefits the individual:

- Self fulfilment (individuals have need express creative urges)
- Playful aspects of creativity might aid cognitive development (Levitin and Tirovolas 2009)
- Makes life worth living (without it, day-to-day existence would be flat and boring)

Given that there are many voices that endorse the general concept that creativity brings benefits, such claims should be critically appraised.

Counter-creativity

If creativity is a putative good thing, why do we simply not have more of it? Is carelessness or intent the constraining factor? There is evidence of biases against creativity, and these are not wholly irrational. Some research indicates the possibility of an inverse relationship between perceived leadership potential and perceived creative potential in the individual; it appears that we would rather have stable, unimaginative leaders (Mueller, Goncalo and Kamdar, 2011, Mueller, Melwani and Goncalo 2012). Martinsen (2011), in distilling research into a set of characteristics most closely associated with creative individuals, highlighted that some traits, such as low sociability and low emotional stability can make individuals unsuitable for certain tasks and positions in organizations.

Creative inhibition: accident or design?

It could be that we traditionally undervalue creativity, we don't fully understand what creativity actually is, how it works, why it works and in what ways we accidentally (or otherwise) impede it. Moreau and Engeset (2015) describe experiments that show how well-defined problems (using Lego building blocks) with explicit instructions and standardized testing can actually hamper creativity. Hence too-narrowly defining creativity might be counterproductive.

It could also be that creativity doesn't easily yield to rational analysis, the tool that stands us in such good stead in so many endeavors; analyzing non-logical processes using logic seems paradoxical.

But it could just be that we have an irrational subconscious distrust of things we can't understand, a fear of 'magic'. Do we intuit that a little creativity goes a long way, that individuals and societies can only tolerate so much? Perhaps many people do not want to be creative, nor do they particularly want to live in an exuberant, creative society, finding it disturbing, upsetting, unsettling, and even destructive.

Creativity: the dark side

What are the potential downsides of creativity? Is subconscious resistance simply superstition, or are there real reasons why distrust might have logical underpinnings?

Vices and virtues

- Anarchic (destructive of convention) = innovative, new
- Teleologically aimless (ill disciplined) = discovery without preconceived agenda
- Unpredictable = surprising

- Irrational = inspired
- Childish = childlike
- Inimical to rationality = delightful, whimsical
- Non-deterministic = points to something beyond determinism

Focusing on the vices, for a moment, perhaps creativity is:

- Overrated: is unreliable, fails to deliver (but deliver what?)
- Untrustworthy, a 'loose cannon' that delivers unintended consequences
- Subversive and anarchic, breaking rules, incompatible with ordered society and proper accounting
- Competitive cheating; we don't want others to get ahead
- Not cost effective, always making prototypes
- Increasingly irrelevant, superseded by problem-solving rational tools
- Incompatible with rationality (is it?)
- Unnecessary/frivolous/superfluous; it's just decorative 'play' at best, a distraction at worst
- Uninteresting - ones creativity is someone else's yawn
- Hazardous to health and wealth

Hypothesis 11: creativity may come at a cost to society:

- Breaking the rules, subverting order, propagating dishonesty, 'outside the box' = cognitively flexible = ethically flexible. There is some evidence of positive correlations between creativity and dishonesty (Gino and Ariely 2012, Gino and Wiltermuth 2014). However, it's notable that the authors equate subversion of rules (of a covertly administered test of honesty) with dishonesty. A more parsimonious explanation might simply be that high-creative thinkers are less likely to accept rules imposed by authoritative figures and consider actions to subvert such impositions as intrinsically more honest than unquestioning obedience. In this paradigm, subversion does not necessarily equate to dishonesty.
- Used to manipulate populace (Huxley 1932, 1958); see next section on the moral dimension.
- Continual innovation is expensive and must pay for itself. The net result is increased consumption per capita and the inhabitant of a modern city may consume forty times as much energy as a hunter gather; advanced civilizations are energy-hungry (Lerher 2012)
- Creative destruction is messy, as in the metaphor that one can't make omelets without breaking eggs. Continual innovation means that nothing is ever finished; we all end up living in a building site, the future is rosy but right now, it's a mess.
- Creativity is selfish; it fundamentally isn't for someone else. This is the charge levelled at individualism by those whose instincts gravitate toward totalitarianism. The implication is that selfishness is nec-

essarily at others' expense, whilst conformity is necessarily in the best interests of all.

- Creativity distracts; it engenders a pale imitation of true beauty as Plato intimated (Gaut 2010).

Hypothesis 12: creativity might entail a net cost to the individual

- The torment of creativity (creativity might be self-fulfilling, but is not generally regarded as comfortable).
- Could be psychologically unhealthy; though there is anecdotal evidence of some causal links between mental illness and creativity, there have been few investigations of whether obsessive engagement in creative practice is inevitably benign
- May exacerbate relationship difficulties. At the simplest level, creative practice and personal relationships can be in competition for scant resources of time and attention. At deeper levels, creative individuals, with all their complex character traits, can be hell to live with (Russo 2015)
- Frustration at lack of success, recognition or reward
- Financial insecurity
- Disordered personal life incompatible with 9-5 working life

It appears that irrational intuition may indeed arrive at useful conclusions, and that 'creativity' is not automatically to be trusted. This is not to say that it should automatically be distrusted; rather, that if something cannot be resolved at an intuitive level, it should be elevated to conscious appraisal.

The evidence supports both hypotheses; creativity can bring benefits and costs.

The Moral dimension: ethics and creativity

Hypothesis 13: Creativity has a moral dimension

Previous writers (such as George Orwell) feared that ruthless governmental totalitarianism would quash individual thought, freedom and creativity. Today, this view seems quaintly archaic. Instead, individuals are bombarded by stimuli that manipulate their thoughts, intuitions and behavior; virtually all our television, radio and internet is free at the point of consumption, paid for by manipulation industries employing creative professionals. This scenario seems closer to Aldous Huxley's *Brave New World* (1932). Huxley concluded something similar in *Brave New World Revisited* (1958), where the author devotes sections to propaganda, selling, brainwashing and subconscious persuasion. Postman (1985) in "Are we amusing ourselves to death?" makes related arguments; totalitarianism comes not from a central authoritarian government but from insidious societal pressure to 'dumb down' and

conform. Predictably, Plato warned us of such a tendency two and a half thousand years ago (Jowett 1871).

Unsurprisingly, artists who ‘sell out’ are regarded as Judas by former devotees. By tacit definition their skillful output no longer qualifies as individual creativity; they become the voice of the machine and so have no claim to the ‘creativity’ domain. This adds an important dimension to the definition of ‘creativity’, one that is implicit in many people’s understanding of the term; creative integrity lies in ownership, and therefore responsibility.

In a model taken from psychological and cognitive science ‘valence’ and ‘arousal’ are used to express the dimensionality of emotion (see Duffy, 1941, Tajadura-Jimenez et al 2011). So ‘arousal’ is how much (measured in departure from some normative situation) and valence is in what direction. It is possible to discuss creativity analogously, with a ‘good-bad’ axis of utility. Viewed from an ethical perspective, it is possible to have something that is very creative, and very bad. The archetypal ‘evil genius’ of so many stories typifies this. Many people might actually prefer ‘bland’ to ‘potentially wicked’. Gino and Wiltermuth (2014) discuss this in *Evil Genius? How Dishonesty Can Lead to Greater Creativity*.

Another ethical dimension pertains in respect of the downstream consequences of our actions. For instance, suppose one had an exciting idea, could see how it could be realized and some of the marvelous implications. Then, suppose one went further, realizing the possibility of a dark side to our creation and could see that the risks of misuse of ones invention might entail great harm. Would one forego the acclaim on the grounds that an invention cannot be un-invented? We eventually come to hear when an inventor regrets their invention, but never when one deliberately turns away from success because of such fears. It may be more common than we estimate, but evidence can never come to light since secrecy is paramount.

There is, therefore, an asymmetry with respect to acclaim for creativity (nobody is lauded for not inventing a brilliant-but-dangerous artefact or idea) that can exacerbate the risky nature of creativity. The moral landscape of creativity and its products is uneven; sometimes creativity should be reined in, but isn’t.

Overall, the ethical dimensions of creativity are significantly under-developed.

Possible causal factors in counter-creativity

Creativity is not a win-win situation; exuberant creativity maybe a marvelous aspect of human life; but it’s not the only thing in life. Sometimes the craziness has to stop. Safety, comfort, law and stability come out of rational thinking. Below is a list of potential motivations for countering creativity, in oneself, others and society:

- Deliberate consequence of conscious action

This amounts to a policy of censorship of oneself or of others because of a significant probability that the consequences will be inimical to our interests. Self-censorship, (because one may embarrass oneself, lose credibility, give others competitive ammunition) falls into this category. Censorship of others, because they threaten our beliefs, income and territory, or because we believe they are behaving foolishly.

- Deliberate consequence of unconscious motives

Envy, competitiveness – it could just be that if don't find the opportunity to be creative, we don't want reminding of the fact that others have opportunities (for creative pursuits) that we don't, and we don't want others to enjoy creativity. We might be uninterested in their creativity simply because it's not our creativity. We might even feel, deep down, that they are being irresponsibly selfish in trying to pursue creativity. We may rationalize that we are behaving in their best interests ("they need to face up to the real world... it's not all about play")

- Unintended consequence of conscious action

One may realize the possibility, but feel the benefits outweigh the risks. Or one may be focused on some other, important factor, not realizing the possibility that our, or others' creativity will be depleted

- Accidental consequence of unconscious action

One may just prefer peace and quiet, having no idea that our demeanor oppresses the creativity of others. Or one may settle into comfortable lifestyle habits that smother or neglect our own creativity.

- Disinterest

It could just be that one simply doesn't care about creativity; perhaps a donut is cheaper and more satisfying than a challenging work of art.

- Exporting costs

Modern organizations tend to devolve costs and responsibility to others, removing accountability and overheads from their purview. Increased costs, bureaucracy and inconvenience are borne by users of the services, and do not appear on organizations' budget systems or performance evaluations. Apparent efficiency savings result, though overall net costs (taking into account all participants) are inflated. Users of online banking, government websites or hospital parking schemes will recognize the sheer psychic cost.

External influences: War, invasion, natural disaster, and economic catastrophe.

The most finely balanced, aesthetically advanced and sophisticated civilization can be 'swamped' by overwhelming external influences.

How?

Creativity can be starved through neglect, masked by other activities, hindered by distraction. Poor understanding of the mental process can also hamper it. Goal-directed project management methods are pernicious since

they evince the wrong kind of thinking. Instruct people to ‘have a good idea’ and they are likely to be creatively paralyzed; the rational, judgmental executive function of the brain is inimical to free associating ‘metaphorical mash up’ thinking. Trying to have a good idea is probably the worst idea of all time; wherever ideas come from, it’s not the land of forceful, Gordian-knot-cutting Power Management™ kind of thinking.

The authors conduct an on-going straw poll, entirely at random (the questions are asked during some appropriate social interaction). Respondents are not sought out; online survey methods are not used since this would result in a self-selecting group (only those who had particularly strong views would respond, resulting in some degree of homogeneity across the sample). The rationale is this: “you only get the answers to the questions you ask” (Berg and Rumsey 2001) – to conduct a quantitative enquiry, it is necessary to elicit the broad characteristics of the terrain to be examined.

The simple survey consists of two questions:

- 1) Would you, if you could, like to be more creative in your life (work or home)?
- 2) What stops you?

Caveats: because the survey is not conducted in rigorously controlled circumstances, uncontrolled experimental variables are not excluded. Hence, credible numerical data are not feasibly elicited. This is an exploratory qualitative method that should precede a quantitative study.

Some findings...

- Too busy, not enough time and energy

“I’d like to be creative, but to be honest, who has the time? I have a million and one things to do. By the time I’ve done half [of them], I’m exhausted. At the end of the day, I just want to veg out... I could do this stuff, if I wasn’t so busy, but...”

- Deadlines

“I have so many deadlines, all of them of someone else’s making. On top of them, a deadline to be creative would be laughable. I just knock something together, when I have to. It’s usually OK – not brilliant, but I can pull it off. I’d like to do better, but in the time available, I do OK...”

A few respondents said deadlines to create actually helped: “... actually, deadlines stir me into action; I suppose I’m quite lazy until it really matters...”

- Competing task demands (signal-to-noise)

“...When I’m at home, the kids want things, my wife tells me I haven’t done something, my mother rings... at work the phone rings, my boss stops me doing what he told me to do by asking continually if I’ve done it. It’s a nightmare. In between, I have to tax the car, book holidays, call at the supermarket. I could never have done all this when I was younger... but then, I used to wonder about the universe and stuff. Maybe that was just idle day-dreaming, I don’t know...”

- Distraction

“I check my email, see if I’ve got that parcel, check my phone, someone’s sent me a message – then the phone rings, someone wants me to do something – there’s always something. I can’t think, can’t find the time to remember what it is I was actually thinking about.”

- Disinterest:

“When I was younger, we had a band...I used to write songs, got really caught up in it...childish, really... now, I’m not bothered...I just want to go to work, get paid for what I do, come home, relax, go out for a few beers”

- Overshadowing (by another, more demonstrative creative personality)

“Some people just have it... looking at [X]’s stuff, it’s so complete...I just can’t come near that; why bother?” and “...Y is always banging on about being creative, driving creativity... it’s like a competition to see who can gain the most creativity credits. I don’t want to compete to be creative, that’s not what it’s about”

- Ownership

“Unless it’s mine, I can’t understand it, it’s someone else’s ideas, I’ve got nothing to give, creatively. If I get told an idea, I head off in the other direction”

- Trying too hard; ideas won’t come

“...nothing worse than that blank paper. I’d rather have anything but that.” and “...when I know that this is the moment, now I have to prove myself... all those ideas that used to swirl around up there just dry up, nothing comes... it’s like a dream with nobody in it and nothing happens; more like a nightmare, really”

- Worrying

“...Don’t you understand? Everyone wants a piece of me -I have so many things I haven’t done, that need doing. I feel guilty about it. My life is so complicated,, and I’m worried I’m not getting on with the right thing” “...worry is death to creativity, it’s the opposite way of thinking, a continual yammering in my brain – I can’t hear myself think...”

- Prevarication

“I tidy my desk, need a cigarette, have to see someone about a bit of administration – anything but the thing I’m supposed to be doing...” “I can suddenly remember all sorts of things I meant to get on with, inconsequential details... but can’t focus on what I’m really supposed to be doing now”

- “Stuckness” (Pirsig 1974),

“I find a thing – could be anything- it just gets in the way, like a brick wall...It’s really, really frustrating... I just can’t move on until I’ve got past that. It fills my mind. It puts me off, knowing I’ll have to go through that”... “I lose all interest in actually doing the creative thinking, I just want to have already done it”

- Atrophy:

“When I was younger, and didn’t have to worry about so many things, having ideas was just natural, I didn’t have to try... now, I never have that

kind of easy come, easy go ideas... I suppose I'm out of practice, or getting old or something" and "taking drugs, having a good time, thinking the only thing in life is creativity – that's fine when you're young, have nothing to lose and everything to gain; when you're older and wiser, creativity is just less important..."

- Pressure of expectations

"...I hate other people's expectations... I do it for me, not for them" and "...once I was in the frame, ... as a person who could be relied on to always have a good idea, I just, sort of, froze... I had to live up to a reputation I didn't make."

- Too many ideas

"Sometimes I just can't get the ideas down on paper – they get crowded out by more ideas, then I just forget. It's really frustrating, kind of manic..."

- Watcher at the gates of the mind:

Many respondents articulated that feeling under pressure to have a good idea actually inhibited the genesis of any ideas. "...I start out with a wild idea... then I remember how people always tell me that wild ideas are fine, but I never do much with them, and the only thing that counts is good ideas, made real, everything else is hot air... so I try to focus on only good ideas, but I seem mentally stiff, like an old man"

"In the case of the creative mind, it seems to me, the intellect has withdrawn its watchers from the gates, and the ideas rush in pell-mell, and only then does it review and inspect the multitude. You worthy critics, or whatever you may call yourselves, are ashamed or afraid of the momentary and passing madness which is found in all real creators, the longer or shorter duration of which distinguishes the thinking artist from the dreamer. Hence your complaints of unfruitfulness, for you reject too soon and discriminate too severely."

—Schiller (1788),

Summary of this section

Overall, it seems that people really don't know how to look after their idea generating faculties and, through carelessness, many people become 'creatively unfit'. As the metaphor implies, 'use it or lose it' is the stark choice and most of us don't realize we have chosen by default until after the fact. The circumstances of modern life may simply make it too easy to forget to exercise our creativity.

Environment and creativity

Hypothesis 14: There are significant interactions between environment and creativity

We have a long history of engineering environments to communicate their purpose. Iconic buildings such as ceremonial places, temples and the like, are supposed to inspire psychological effects such as awe and reverence. The seat of government is rarely to be found in a room over the grocer's shop.

Whether we are successful in constructing environments that inspire creativity is unclear. Architects do have notions of buildings-that-inspire, but there is little supporting scientific evidence; experiment design would be problematic. In any event, there's more to an environment than just the buildings. The actual position of the individual within the pecking order might be much more relevant. Not all individuals in an organization are seen as of equal value, and the inspirational elements of an environment might not be evenly distributed. The boss may have an office with magnificent views over the city; workers at the bottom of the organization might have a windowless cubicle in a large noisy office. This can make the majority of individuals feel (probably rightly) they are not really seen as individuals but unimportant small cogs in a vast machine, whose opinions are not listened to.

Large organizations such as companies, government and societies tend to suffer from this 'individual-blindness', so organizational-level policies on creativity are doomed to partial success, at best. There may be increasing divergence between the individual and societal environment (workplace, government etc.,) in respect of creativity. Creativity resides in individuals and is operated on in their interactions with the environment (the material circumstances and organizational structure). At best, organizations can access creativity 'second hand' – they can provide fertile ground and harvest the results. At worst, organizations can quash (inadvertently or otherwise) it.

Mature organisations are less creative: big companies don't play

Hypothesis 15: Organizations and societies need, but do not cause or own creativity.

The relationship between maturity and creativity is epitomized in the corporate context. It might be simplistic to state that creativity is exclusively the domain of the immature, but there is something in the idea that mature companies, predicated on efficient delivery of products and services, have playfulness designed out of them.

Max Wessel, in an article for the Harvard Business review entitled "Why big companies can't innovate" (Wessel 2012), describes how some mature corporations do manage to strategically innovate, through the strategy of 'offspring'. Basically they create immature research companies, and shelter them from the normal day-to-day operations.

Other strategies include imitation: observe an innovation then copy it, steering through the legal niceties of Intellectual Property (IP) regulations, theft ('piracy'): similar to imitation but avoiding legal redress, and adop-

tion—go shopping for immature, creative companies and buy them, along with the associated IP.

As Wessel indicates, it's not all plain sailing. Companies can fail to understand the appropriate business model needed to bring the innovative products to market, they can suffocate their new progeny, turning them into uncreative doppelgängers; they can even undermine creativity by giving too many resources.

The competitiveness that drives corporate efficiency is the very reason that companies need to innovate, yet it is also the reason they can't – without help. Wessel point out that companies that maximize efficiency, which is measured specifically in profit, become totalitarian; there is just one goal, and everyone in the company has to subscribe to it wholeheartedly. In effect, companies optimize their degree of 'fit' to their ecological niche. The evolutionary metaphor is vivid; highly specialized species adapt poorly to gross changes in their environment.

Consequences of suppression

It could be that the positive consequences of constraining creativity, viewed logically, might entail demonstrable benefits. Addressing the 'vices' of creativity could result in a fairer, safer, more orderly society. The individualistic, impulsive, egocentric, anarchic, egocentric, unreliable and expensive influences could be excised. The competitive advantages that the kind of mentality that gave rise to creativity are no longer at a premium; after all, we've reached the top, we've beaten all the other species hands down, what is left? We could have eternal peace and order without surprises, without petty fears, ambitions or hopes. This ordered society, freed of the exhausting in-fighting could peacefully conduct the pursuit of 'higher truth' without hindrance by the internal friction that previously dogged all societies.

“This sounds remarkably like Plato's Republic”

—Jowett (1871).

But would it pan out like that? Would progress continue or plateau? And given that evolution is a blind process consisting of inevitable mutation and natural selection (competition), would such a society be entirely defenseless in the face of newly arising competition? Karl Popper's criticism of Plato's totalitarianism is on humanitarian grounds (Popper 2013) but the more general question here is whether such a circumstance can actually survive, or whether, like the archetypal Ponzi scheme (see: Zuckoff 2005), they are predicated on some fundamental intrinsically non-viable premises that determine that they must, eventually, crash and burn.

It's logically impossible to prove the demerits of suppression before the fact. Diminution of the kind of insane, inspired problem-solving capacity we have so far enjoyed, might be irrelevant in all but the most un-anticipatable existential threats. But 'black swan' theory reminds us that unlikely events

happen, eventually (Taleb 2007). The kind of cognitive processes involved in creativity are not merely anachronistic hangovers from a more primitive stage in our evolution, but are vital when faced with unanticipated (and logically unforeseeable) events.

A world without creativity might be regimented – but what’s the point? Why have millions of identical units when one epitomizes them all? It might be ordered, but to what end? Same applies. In effect, what would be the point at all of having organic life in the universe if it were indistinguishable from all the other matter in the universe?

Of course, the above arguments amount to macro arguments that should not automatically be applicable to micro-level existence. There may indeed be no reason for life to exist (apart from the obvious observation that the universe has, somehow, in us, evolved the capacity for self-consciousness) but that’s not the point. We each have a life to live, as best as we can.

In any event, we are not at a stage where we could declare creativity redundant. To the individual, creativity—large or small—is bound up with what it means to actually be an individual. The minutiae that comprise ‘my life’ are what it means, to a human, to exist. My creativity might be employed or enjoyed by others, but it’s mine. A useful concept can be metaphorically transposed from cognitive neuropsychology: ‘peripersonal space’, which refers to the within-reach area around the individual in which perception is acute (Tajadura-Jiménez et al 2012). Perhaps creativity in individuals requires psychological peripersonal space.

Environmental interactions play a significant role in encouraging or constraining creativity, but the science of managing these interactions requires significant investment.

Conclusions

In this chapter, we have articulated examination of creativity in the context of a number of hypotheses. These concern the risks and benefits (of encouraging or constraining creativity), interactive factors and the potential for rational inquiry into the subject. We find that much of the thinking about creativity is itself of the intuitive kind; there is more anecdotal evidence than scientific evidence.

It has often been ruefully said: “...managing creatives is like herding cats”. But of course, if you want a herd, don’t get cats, and if you want cats, don’t try to herd them.

In the preceding sections, what is clear is that creativity and rationality are different kinds of processes that can be antipathetic with respect to each other. Organizations, societies and individuals could not be predicated only on creativity; they would be unstable. Nor (rather counter-intuitively) should they be entirely rational; they become senile, moribund even. Locked together in eternal conflict, neither must win or the victor would perish soon thereaf-

ter. They must continue, and must stay healthy. Fortunately, we have a successful exemplar: the human brain efficiently manages to combine them through ‘cognitive style switching’. Hence, cognitive neuroscience can offer insights into how we might structure societies.

Whilst organizational and societal environmental circumstances can affect creativity, creativity nevertheless resides in individuals. That is, evidence suggests that environmental circumstances can cultivate or inhibit creativity, but no political or organizational policy has ever been proven to cause creativity.

Can we have an ordered society, yet one that resolutely comprises individuals? Can we have a rational approach to the inculcation and utilization of creativity that accounts for the risks and benefits in systematic ways? Dogmatic denial of risk is no way forward, neither is dogmatic suppression of the evidence for risk. Creativity is sometimes overrated, and sometimes underrated.

Creativity is Prometheus’ fire. Can we make better use of it without being burned? The difficult trick is to maximize upsides and minimize downsides. Can we tame the tiger without losing something essential to what it is to be a tiger?

On reflection, we often inhibit, suppress or even destroy creativity, sometimes intentionally (whether consciously so or not) and sometimes accidentally (carelessness or collateral damage during some other effort). Sometimes we suppress advisedly (the creativity in question is not in our best interests) and sometimes inadvisably (short termism will come back to bite us). The situation obviously is muddled and should not be allowed to continue. Only a rational approach can disentangle the hearsay, anecdote, near-superstition and sheer amateurishness with which we have approached the creativity problem in the past. The future robust health of our individuals, institutions and societies depends on our optimization of the relationships between rationality and creativity.

What is suggested here is that the route to better utilization of creativity is better understanding by the individual, organization and society of what it is, and does, and what the risks and benefits might be. This is a two-way street; individuals don’t really understand organizations any better than organizations understand individuals. Tricks of technique might provide immediate results but cannot produce long-term gains. Dogma will not suffice.

We have a grasp on qualitative but not quantitative characteristics of inhibitory factors. We have no precision in understanding interactions between such factors.

Creativity can be investigated in philosophy, psychology and cognitive neuroscience. We need an ontology of creativity, an understanding of the mechanisms of creativity, and a fuller reckoning of the ethics of creativity. What is required is a detailed, systematic and scientific approach to creativity; anything less would be ‘smoke and mirrors’.

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Chris Wilson is the Learning Enhancement Manager at the University of Derby in the UK and an active composer and educator. He is a classically trained violinist, composer and practitioner in the technological arts, and has published, and presented internationally on the subjects of creativity, artistry, project management, and education. With a musical teaching career He now leads university projects and works with national and international organisations in the development of creative learning and teaching practice.

Michael Brown is the Programme Leader for the BA (Hons) Music degree in the College of Arts, at the University of Derby in the UK. He holds diplomas in both Art and Music, a BSc (Hons) degree in Software Engineering, Mathematics and Music, and a Masters degree in Contemporary Composition, which combine to serve his interest in computer creativity. He is a Principal Researcher with over twenty-five years of teaching experience, an active artist, composer and musician. As well as maintaining his professional role, he is a member of the American Creativity Association and has presented his research in multimodal creativity internationally.

CHAPTER THIRTEEN

STAYING CREATIVE: CREATIVE TECHNIQUE, HABIT AND EXPERIENCE

CHRIS WILSON & MICHAEL BROWN

Abstract

This chapter focuses analysis on a practice-based research project exploring personal creativity in musical composition. Seeking simply to explore the process and experience of creative routines in a more focused way—most specifically through imposed constraints of discipline, productive time and working materials—the project developed in unexpected ways and the focused act of observation itself led to the development of unanticipated insights.

Initial assumptions being that: 1) The right balance of challenge/constraint and creative context can stimulate creative fluency and flow, and; 2) The wrong balance of challenge/constraint and creative context can inhibit creativity, the subtle variations of experience and the delicate structures involved in framing ‘creative balance’ in the composition process developed insights into the relationship between creative boundaries, activities, and creative identity.

Creative fluency and creative quality can, and routinely does, emerge from difficult and constrained creative conditions. This text presents a personal insight into the creative experience of working through a defined programme of compositional activity, deliberately designed to test and to challenge, and how the same parameters of creative activity can frame everything from the most positive and affirming of musical activity, to the most desperate and distressing. It is through both pain and pleasure that creative value can emerge.

Keywords: Creativity, routine, inhibition, discipline, productivity, flow

Introduction

"The arts are not a way to make a living. They are a very human way of making life more bearable. Practicing an art, no matter how well or badly, is a way to make your soul grow, for heaven's

sake. Sing in the shower. Dance to the radio. Tell stories. Write a poem to a friend, even a lousy poem. Do it as well as you possibly can. You will get an enormous reward. You will have created something."

— Kurt Vonnegut, *A Man Without a Country*.

This text situates a first-person narrative exploring a research project based on the composition of music. The focus of enquiry being creative experience through creative constraints, the practice-based research explores a defined period of creative musical activity and a structured programme of musical composition, publication, and creative reflection.

Originally conceived in quite focused terms, the initial project aims were simply to explore the process of artistic creativity through constraint and limitation—of time and other factors—to evaluate the extent to which the imposition of boundaries affect creative output productivity and quality. Relevant specifically to educational practice in the teaching and assessment of musical composition, the aim was to develop a better understanding of creative musical experience, a subject more often mythologized than considered logically (there is no actual magic involved, as much as creative musical thinking can be mysterious and often exceed the available speed of documentation), the practice-based and collaborative approach to the research nevertheless led both to greater personalisation and conceptual diversification in the thinking involved. The initial focus became a blur, but a blur requiring interpretation and description nonetheless.

Ultimately, this chapter is simply a reflective account of a period of creative activity undertaken within a series of self-imposed constraints. The aim throughout being to explore the process and experience of creativity under constraint, and to consider the nature of boundaries in creative activity through routine more generally, this text simply presents an insight into what it is to both flourish and struggle in creative practice and the relationship between boundaries and creative experience; an attempt simply to consider Bourdieu's 'Habitus', the schemata of creative activity, and to explore the 'rules of the game' in the composition of music (Odena, 2012: p. 10) when challenged and inhibited. Rather than for the purposes of testing specific aspects of creative process or outcome through musical composition, this is merely a story of what was learned from such an experience.

Creative boundaries and constraints

"None are more hopelessly enslaved than those who falsely believe they are free."

— Johann Wolfgang von Goethe, *Elective Affinities*.

In any discussion of creative limitations and constraints, it is important to clarify that creativity itself requires boundaries; limitation being an integral

aspect of every act, product, and experience of creativity. Without a framework or established domain through which creative ideas can be communicated and decoded, ideas cannot be perceived, never mind evaluated in terms of creative significance. Such a framework requires elements of commonality or unoriginality and, ultimately, creative limitation, for there to be any visibility, or audibility of creative ideas. As discussed in a previous publication (Wilson & Brown, 2015), both complete freedom and complete inhibition arguably represent equivalent points of zero creative potential. Creativity is ultimately defined by the relationship between new and existing ideas but without transcendence of some form or another, creativity is simply not possible.

Nevertheless, there is a clear distinction to be made between positive boundaries related to creative frameworks and cultural contexts, and negative boundaries related to creative inhibition, perhaps the most pernicious and most common being limitation of creative time and opportunity. As is often the case with creative practitioners, an exclusive focus on personal creative practice is invariably challenged by the creeping demands of wider personal and professional life. Leading frequently to a gradual dilution of creative endeavour and reduction in time spent in focused creative practice, an unintended but nevertheless inevitable un-focusing of creative attention can follow. As musicians, composers and academics, the act of actively composing music, a process that for many accounts for tens of hours per week of activity during peak intensity, often becomes an occasional endeavour, a fringe activity, and a marginalised pursuit, as other activities take over. Evident in all those who recall in memory a distant creative practice of one form or another, occasionally, and often routinely, the boundaries of time and other factors can become insurmountable and lead to creative atrophy.

All creativity ultimately develops, flourishes, and decays. The inevitable cycle of life dictates that all creative potential (both productive and receptive) emerges naive, develops through opportunities for creative experience and expression, often missed, and ultimately declines and finally disappears. All sound ultimately dissipates and is absorbed by surrounding surfaces, transduced into mere momentary vibration and miniscule temperature elevation. All creative artefacts eventually subject to the ravages of erosion over time, all temporal acts ultimately lost in those very same sands. Nevertheless, it is through creativity that the prospect of immortality is presented in its most tantalizing form. It is only through acts of creativity that any form of ongoing impact beyond the boundaries of existence can be realized; it is only by passing on originality—either through the more immediate production of offspring, or the germinal impact of ideas—that any form of existence, beyond existence, is possible.

A sense of creative accountability as a composer of music simply implies the need to ensure that the best of ideas are captured and communicated. The ideas may be plentiful and readily accessible, but the dedication to capturing and sharing these ideas is easily eroded when the activity is not a primary professional activity. Seeking in part to address this problem in this project,

through active re-engagement with creative practice, boundaries were imposed both to test, and to protect creative activity.

Creative Being: Drifting beyond boundaries

Whilst the initial intention was simply to document the experience of creative activity and routine with defined limitations, other factors relevant to the understanding of creativity as a cognitive process and perceptual experience became apparent during the project. Consequently, this text presents a mixture of focused, first person narrative and empirical research data, in the form of tangible musical results, and consideration more generally of the wider implications of creative inhibition and the marginalization of artistic practice. From the initial question - *What happens if you impose limitations on creative activity?* - The wider questions of - *Why are there limitations on creative activity; Are creative inhibitors real, and; what are the implications of creative inhibition?* - are explored through consideration of creative self perception, self-actualization, creative transference, and musical production.

As is common in creative practice in the arts, and indeed fundamental to the definition of creativity itself, this research did not lead quite where it was anticipated to lead. Research became 'messy' but led to positions of understanding nevertheless worthy of onward communication.

Charting the creative project

Whilst there are artists and creatives more generally who feel compelled to create, driven almost against their will to engage in creative practice, like most, I became and remain a composer because I have always loved the process and, having therefore devoted considerable time and attention to composing, become quite good at it. I started composing music with a particular focus from about the age of 12, and this became an activity that I was fortunate to devote my complete attention to at Music College. Indeed, for many years, composing music is almost all I did, often for days at end without any break when deeply engrossed in particular projects. Over time, compositional activity, peaking at approximately 40-60 hours per week for sustained periods during my undergraduate and postgraduate studies, gradually declined as wider professional responsibilities began to occupy increasing amounts of my attention. Initially becoming punctuated by other activities during the early stages of my teaching career, eventually productivity began to decline more rapidly and creative activities become more concentrated in bursts rather than ongoing and sustained practice. Twenty years ago, I would routinely generate over an hour of new musical ideas a month, currently sixty minutes of finished compositions represents a productive year.

Nevertheless, whilst the focus of this chapter is very much framed by a sense of having drifted away from regular compositional activity in the literal sense, the process of composition being very much a cerebral one, in actual fact the narrative is more one more of exploration of deliberate contact with

the documentation and onward communication of musical ideas. For me, composition has always been more a process of thinking than doing. Doing is merely the effort required to communicate musical ideas to others. I have always maintained the process of musical composition in my own thinking and in the very way I interpret the sounds I encounter in my environment. This project is not so much about creative being, as it is about being creative in the presence of others and for the benefit of others.

Like many composers, I compose music in a variety of ways and through a range of different mechanisms, from paper-based manuscript and written notes, to computer-based software and portable recording and editing devices. Mainly I carry and juggle fragments of ideas and find means of assembling these when the opportunity or the need arises. Focusing here on the use of laptop-based music recording and production software in sculptural approaches to composition and sound editing, software-based approaches also presented the most effective means of meeting the objectives of composing and publishing of results in tight timeframes. The ability to work using headphones whilst small children slept was also advantageous and unavoidable as an additional constraint.

A routine was established. My creative practice had become more structured around sporadic bursts of creative activity and it had been many years since a regular pattern of compositional activity was commonplace. Therefore, on Friday evenings at 9pm, a period of creative production would commence, progress, and culminate with the capturing of a recorded outcome for online publication. Whatever stage a musical idea had reached by a 11pm deadline, the result, or at least an outline of the ideas involved, would be published online. Whether the process was productive or disastrous, outcomes would be made audible and available. Most importantly, whatever the perceived pressure to devote the time to other activities, the process would be completed in a disciplined way.

This process was repeated over 12 consecutive weeks collectively representing cumulatively 24 hours of creative activity. Beyond basic rules regarding time, no specific musical objectives were established. The process of creative decision making, both within individual sessions of activity and between sessions of activity, was to be explored through the creative process.

Creative processes and outcomes

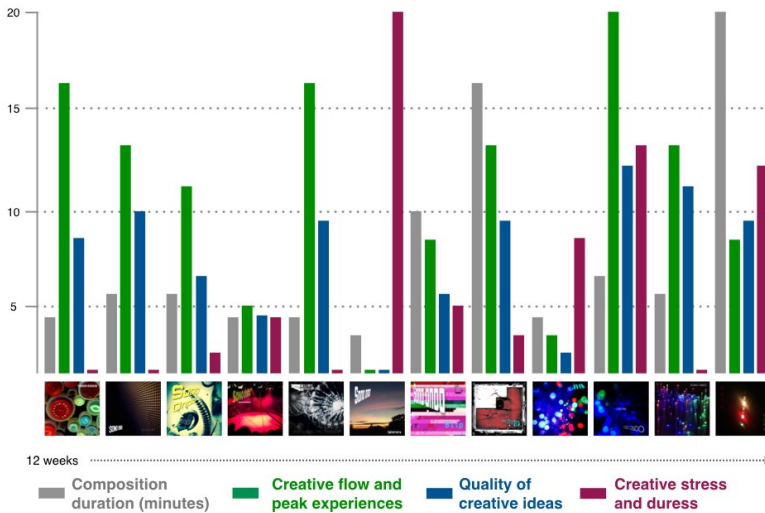


Figure 1: 12 weeks of creative practice

As outlined in Figure 1 above (and Figure 2 below), twelve consecutive weeks of creative activity produced twelve compositional ideas, of varying durations, related experiences of creative processes, and resulting quality of ideas. As with every creative project, in my experience, the beginning was marked by optimism, even excitement, as possibilities were considered. Accepting and even revelling in the naivety of the start of a creative project, particular satisfaction was evident simply for the fact that a certain sense of permission was evident for a return to creative routine. For the first time in many years musical composition would become a defined feature of my working practice. I felt like a composer and was somewhat taken aback at the significance of that experience. However, whatever was anticipated in terms of creative experience and productivity was to lead in unexpected directions and involve new creative experiences, including the most productive and fluent, and by far the most difficult and unpleasant ever encountered.

“Demos from fragments of time spent moving dials and clicking track pads. The aim is rediscover my process by forcing ideas.”

—Author description of project compositions: <https://soundcloud.com/cj101-1/sets/own-things>



Figure 2: 12 compositional ideas

Initially conceived as a linear study process, with obvious value in sequential discussion, subsequent reflection and analysis of the project has led to a different approach to the structuring of discussion and analysis. Whilst a certain iterative development of fluency and technique was evident, more significant in determining the productivity, quality, and experience of creative processes were other factors, and other experiences more notable. Creative quality was generally judged to be low in overall terms in terms of explicit analysis of the musical ideas produced. Nevertheless, given the constraints involved, primarily that of time, and the creative perspective of the possibilities of the overall ‘raw material’ produced during the course of project (outlined at the end of this section), the value of creative investment was judged to be high in overall terms. Insights were developed and musical ideas developed capable of acting as germinal starting points for future creative activity and further, unconstrained, development.

Rather than simply describe the creative arch of the project and discuss individual creative events in sequence (See Figure 2 above), the following reflective account of creative practice instead focuses analysis on different aspects of creative experience and outcomes. Whilst compositional duration is highlighted in Figure 1, in the context of compositional activity using computers, duration is a relatively arbitrary measure of creative output; it being perfectly possible to generate greater duration of musical time than time spent

developing, given suitable use of repeat editing and faster-than-real-time mixing and audio rendering. Considered more important in this analysis are:

- **Creative beginnings** (the initiation and outset of a creative process);
- **Creative flow and peak experience** (ease and reward of practice), and;
- **Creative inhibition, distress and ambivalence** (creative difficulty and creativity under duress).

Creative beginnings

The beginning of this creative project, as with every creative project beyond a certain boundary of definition, clarity, parameter, or inevitability, in my experience, was joyous; the excitement of possibility presenting an almost panoramic sense of space and opportunity. Perhaps amplified by an underlying interest in returning to more focused composition activity, the perspective nevertheless mirrored both my own experience of creative practice and that reflected in the many biographies of composers, writers and artists outlining experience of the initiation of creative activity. It is at the outset that the possibilities are most great and most numerous, prospects so intriguing and uncertain, and creativity at its most unconstrained and open.

Infinite Circles



<https://soundcloud.com/cj101-1/infinite-cycles-1>

Infinite Circles was composed and produced towards the end of a short break from work and after a busy period of writing and international travel. The start of the creative project, and the prospect of the creative experience was wonderful, exhilarating even. Every possibility was available, every direction open, I was refreshed, unpressured, and I chose to play. The composi-

tional event occurred spontaneously and led directly to the development of this research project, and establishment of the basic parameters of the project introduced earlier in this text.

The process was a more recreational experience than a creative challenge. It being routine that I invest several hours work each evening on professional work (reading, writing, developing, communicating), the transference of focus and exclusivity of attention to pure musical creativity a return to familiar and well loved territory was relished, and approached with unconditional expectation of enjoyment, and a perception of zero overall risk. Nothing could go wrong. Even if it went wrong, it would only be correctable through future endeavour.

The creative process began inauspiciously. I simply reverted to what I considered at the time to be the most enjoyable possible creative approach. I opened a music production software application on my laptop, with my headphones on, and I started to explore ideas. At this stage working independently of the project parameters that were to be established subsequently, creative flow was immediate and enjoyable, any thought of constraint very far from mind. Working specifically for enjoyment rather than with perhaps what could be described as serious artistic intent, and seeking to make progress quickly so as to enrich the play, simple ideas were assembled quickly and with nothing but joyful experimentation and playfulness.

A simple software synthesizer patch (sound) was initially selected from a range of possible sound sources. Subsequently manipulated, reprogrammed, played with, and situated in specific sound environment through additional of signal processing techniques or 'effects', a short motif was captured, cycled in playback monitoring of the recorded musical ideas, and complementary musical elements added through an iterative process of musical thinking, listening, programming, and manipulation of software controls over all aspects of the developing sound environment. The capabilities of software-based music production lend themselves to constant playback of musical ideas and provide almost limitless control over sound characteristics and combinations. Consequently, at any given point, focus of interest or attention can be developed in fine detail with multiple parameters available for manipulation. Composing within a recording-based process provides opportunity to connect directly the musical idea with the musical end result, and procrastination over any given point of creative thinking or musical idea easily absorbed with tinkering with other aspects of the project.

The compositional process relaxed into patterns of activity established over decades of compositional work with computers and recording technology. Whilst the sophistication of the software and wider technologies may have changed over time, comfortable patterns of operation led to the gradual settling of musical ideas in terms of tempo, tonality, rhythm, and tonal characteristics of the sounds and sound environments. Percussive ideas were developed alongside bass elements and textural, harmonic, and melodic ideas

added in parallel with back-and-forth attention to editing of controls over other aspects of sound and sound placement of established elements.

Stylistically, *Infinite Circles* developed into a form of electronica evoking aspects of musical style and form of previous creative work. Drawing almost entirely from a sound palette of vintage synthesizers, loop-based compositional approaches also reflect sample-based computer music styles and forms indicative of previous commercial work. The track reflects a playful reminiscence more than a meaningful creative attempt to push forward.

The moniker *Sono Ondo* was adopted on a whim, at the point of publication. Meaning ‘Sound Wave’ in Esperanto, the language translation was a side thought as I was working in parallel at that time with several overseas projects and research involving regular use of web-based language translation tools. Consequently, I stumbled across the idea of Esperanto and then played with word combinations until a pleasing result emerged. *Sono Ondo* was simply the result of exploring the translation results of numerous words and phrases seemingly relevant to the musical ideas, materials involved, and general poetic value. ‘Sound’ being the first thought for a word to translate, the translation result, ‘Sono’, was immediately selected and other accompanying words explored. ‘Ondo’ (Wave) was eventually identified as the second word. It balanced and developed a form of pleasing symmetry that felt comfortable.

The title was determined approximately half way through the creative process. Having adopted a compositional approach involving cycled and repeated patterns, and having focused concentration on the editing and performance of musical ideas in cycled patterns during the compositional process, the title was perceived as necessary, and is therefore a result of spontaneous selection. The cover image was adapted from a photograph taken at a haberdashery of a display of thread bobbins. The selection of title and the selection of image being integrated creative selection and ideation processes, both undoubtedly connected to the experience of cycles and loop points in the musical editing process.

In the case of *Infinite Circles*, the creative beginning of this project, the creative activity is acknowledged to have been ‘unconstrained’ and undertaken following a period of rest which may account principally for the perceived success both of developmental process and outcomes; the evaluative framework established after the results to a great extent. The composition was only published because it was deemed suitable to do so and the outcomes ultimately the result of a period of open play. Subsequent weeks were subject to different constraints leading to different experiences. Nearly all creative events led to creative insight, and transferable benefits. Subsequent weeks established the supplementary challenge of:

- Always beginning from ‘scratch’ (never returning to finish something from a previous week).
- Publishing with accompanying cover image.

Creative flow and peak experience

With respect to creative flow (Csikszentmihalyi, 2014) and peak experience (Csikszentmihalyi, 1995), reflecting on the completed series of compositional ideas, the relative complexity of individual compositions can be evaluated and, given the equal timeframes involved in compositional development, a basic calculation made as to the relative fluency of creative work (or basic productivity of ideation). However, as identified in previous discussion of the basic data about the compositional outcomes, duration itself is by no means a reliable indicator of compositional fluency in a computer-based music production process. Equally and more generally, duration is not a clear measure of creative intensity or the quantity of ideas in music composition more generally. John Cage's organ version of his piece *As Slow as Possible* (ASLSP) originally composed in 1985 for example, has a concert performance duration of over 600 years, and the spiral cut groove at the end of side 2 of the original LP pressing of The Beatles' *Sgt Pepper's Lonely Hearts Club Band* renders the final moments an infinite loop, reliant only on power to supply the record player to last in perpetuity (or at least until the stylus wears down). A composer need only add the word 'infinity' to a repeat mark to lock musicians into a potentially lifelong commitment. Duration is easy, and a potentially unreliable objective indicator of creative effort. Using computer-based software, repetition of sound elements or the elongation of musical ideas, is a relatively simple process.

Equally, complexity, in and of itself, dependent on the processes involved with development, can also be a difficult factor to map to creative flow. Whilst the quantity of musical ideas may at first glance present an objective approach to the analysis of productivity, compositional simplicity can masquerade extraordinary effort and render hidden abandoned alternatives and prior iterations, whilst complexity can emerge from simple creative steps and can only be determined according to the musical schema concerned. John Williams' final selection for the five note musical phrase synonymous with the Spielberg film *Close Encounters of the Third Kind* (1977) for example, was selected from dozens of alternatives before eventually being selected and defining the film. The experimental and avant-garde in music may often be attributed with the characteristics of complexity, where only random or unconstrained creative processes were involved. Ultimately, any judgement of creative fluency and flow must take into account the experience of and thinking behind creative processes to frame more accurate analysis of creative activities and products.

Whilst of course not fully content with the published results from a creative editorial perspective of any of the twelve creative 'events' developed in this project, some nevertheless reflect more intuitive and more productive creative experiences. On some occasions, unexpectedly, and in different creative contexts, musical ideas came together quickly and satisfyingly. In some cases approaching peak experience, where all attention collapsed into a pro-

ductive and seemingly effortless sequence of thinking and doing, on many occasions, creative flow was more evident and experienced at the time.

When the next step, the next idea, comes quickly in composing, as with creative practice in other domains, there is no clear way of describing precisely why fluency emerges, what may account for this, or indeed precisely how this experienced beyond vague descriptions of calmness, contentment, and general satisfaction. Nevertheless, the resulting composition presents a unique opportunity for reflection and consideration of creative processes, themselves both mapped and interwoven with the resulting sounds. It may be intriguing to note, for those perhaps unfamiliar with creative arts practice, that the experience of creativity and the processes involved in creative practice are commonly recallable in vivid detail. Compositions produced over three decades ago remain recollections of considerable precision and clarity. Such is the focus and the attention associated with musical composition, the process involving every aspect of self, the act as well as the documentation of musical composition produces a recording, both often in high definition.

Descent



<https://soundcloud.com/cj101-1/desc3nt>

Descent was perhaps the composition developed most calmly and serenely of all twelve. Unlike the gentle excitement of the previous, inaugural week, where creative activity was started spontaneously and directed primarily for the purposes of musical recreation, this was the first occasion under which the constraints of time, imposition of title and identity, and wider publication would apply.

No preconceived musical ideas were taken into the creative activity but the musical ideas developed from an almost immediate fixation and focus on *slow*. Recalling the recent and more generally recalled experience of landing in a plane, a brief pause in creative musical activity led to the development of the resulting cover image and title; itself taken of the side of an airplane seat on a recent European flight. The creative process subsequently reflected the

personal experience of landing in a plane in terms of the mixed emotional experience of relief and anxiety. Almost certain in the knowledge that you will safely be grounded in a short period time as the clouds drift past the windows, there remains the equal certainty that the point at which the plane returns to the ground is by far the most dangerous aspect of air travel with potential to deliver terminal perceptual experience.

The initial focus on slow speed progressed through the composition. Perhaps because of the recollected stillness experienced in the cabin of the aircraft, and a personal tendency to close my eyes and to be listening to music at the point of landing, as well as determining *Descent* as being conceptually linked with the experience of landing in a plane, a focus on development of music I would like to listen to in that context also emerged as a consideration. Brian Eno's *Ambient 1: Music for Airports* (1978) providing perhaps the most notable aviation-related musical soundscape designed to enrich airport environments, this creative process developed the simple notion of assembling sounds that would nullify practical anxiety and enrich positive experience in flight. Perhaps quite literally connected to the experienced desire for 'slow' arrivals by plane, rather than sudden and terminal impact, a basic conceptual idea found a personal resonance, a context for deeper emotional reflection and consideration.

The composition and development of *Descent*, punctuated, less than thirty minutes into the two-hour creative time-frame by the development of the cover image and title, is unremarkable except to note that the establishment of the conceptual framework represented immediate creative reassurance. Simple, calm, and slow sound environments are what I always prefer to listen to when landing in a plane, therefore development of textures rather than notes represented an immediate sense of reduction in the technical demands of the creative process. Developing a series of synthesiser motifs and incorporating edited fragments of previously recorded piano improvisation, the creative process is characterised simply by the application, in part, of the recalled perception of forced calm involved in the experience of air travel, and informed by the immediacy of production requirements. Ideas had to be documented quickly to exaggerate the stillness of the sounds.

Two hours is not a long time. To be creative is by definition a spontaneous process but to coordinate the simultaneous development, capture and publication of new musical ideas in a confined timeframe is a complex task. The juxtaposition of urgency and conceptual 'slowness' framed a particularly productive and flow-like creative experience. There was in perfect symbiosis, a reassuring sense of parallel urgency and infinity. I even considered cheating and extending the boundaries beyond the two-hour timeframe when faced with the enthusiasm induced by germinal ideas, infinite latent possibilities emerging for subtlety and the development of quality, yet as the clock ticked down I could not resist the project boundaries, established on days earlier. The tension between creative constraint and creative ideas was tested immediately. The composition was published as planned. But begrudgingly. Highly

incomplete work that flowed extremely well had emerged and been communicated yet I was not ready to let go.

Fold



<https://soundcloud.com/cj101-1/fold-rough-mix>

Creative activity in the third week, whilst framed by the project parameters and developed through now more defined constraints of time (the preceding week with *Descent* almost the precedent for discipline with creative time), was nevertheless essentially subject to the benefits of the same conditions supporting the development of *Infinite Circles* and *Descent*; namely that of a preceding period of rest. This was true to such an extent that the enthusiasm to repeat the experiential success of the initial compositional events was such that the wider research project was conceived and the parameters devised; the imposition of which only made the prospect of the third week's creative event more enticing. Having established precedent for creative fluency and immediate publication of 'complete' musical ideas—cohesive and balanced musical compositions—the attempt to reproduce peak experience, and to mandate equivalent levels of productivity through an almost performance management approach, made the third week of the project perhaps the most exciting of all. Actual and perceived risk remained extremely low. Potential for creative fulfilment was extremely high.

Stylistically taking queues from *Infinite Circles*, and indeed very much seeking to extend compositionally from that point, the creative approach was much more strategic and focused on the 2-hour timeframe. I had of course cheated and not only edited the cover image and predetermined the title, but also developed a number of basic musical ideas in the time leading up to the compositional event. Intrigued by the constraints rather than inhibited by them, the creative process became more a technical exercise than a period of play, treated more as an assignment brief or professional commission.

Working initially to establish the basic sound elements and to ‘set up’ the virtual recording and production software environment, individual instrument patches and sound sources were selected quickly and basic parameters such as tempo and signal processing (sound compression, reverb) established. The compositional process was unremarkable suffice to say that the peak experience in this case was very much defined by an emphasis on effortlessness and intuitiveness. I had some basic musical ideas. I thought ahead about realising these. It all worked perfectly.

Centre



<https://soundcloud.com/cj101-1/centre-mix?in=cj101-1/sets/own-things>

Perhaps the most significant aspect of the composition, recording and production of *Centre* is the speed with which it was conceived and subsequently published. The track represents the most productive period of composition in the entire project from the perspective of production time and quality of results. Having tried and failed to develop a particular musical idea for over an hour of the defined two-hour creative timeframe on the date concerned, losses were cut and the creative activity was momentarily abandoned. Almost immediately, a sense of commitment to the publication of creative results led to the rapid assembly of a series of sound elements incorporating sounds of the Yorkshire coastline and the church bells of my hometown amongst a series of textural synthesiser parts.

The published results are the outcome of approximately forty minutes work. The underlying sonic ideas have merit, but have scope for much further development. Nevertheless, the ideas came quickly and the solutions emerged rapidly. Recognising that creative practice can drift towards procrastination and indulgence, often with profoundly valuable results, the imposition of strict time restrictions certainly focuses the mind and can induce effective productive responses.

Unknown Mechanism



<https://soundcloud.com/cj101-1/better-known-mechanism>

Unknown Mechanism whilst far from a complete musical idea, is nevertheless that which developed most intuitively and most productively of all weekly bursts of creative activity. It is one of several individual ideas for which there are plans to return for further development and completion. Fulfilment emerged despite a lack of expectation or positive anticipation, or preparatory thought. On this occasion, the project provided license to turn to musical activity despite pressure of time that would otherwise have inevitably led to catch-up or get-ahead activity on other projects. I was allowed to compose and consequently relaxed into the inevitability of this far from reluctantly and actively appreciated the project parameters as supporting my personal well being.

With respect to creative productivity, having identified the limits by which duration and musical complexity can be used to determine creative flow, *Unknown Mechanism* was perhaps second only to the first creative experience with *Infinite Circles* in terms of creative enthusiasm in the developmental process. As the fifth week of activity however, *Unknown Mechanism* emerged in the context of an extremely busy period activity in other areas. Consequently, this track represents one of the more unique creative experiences in this project. Without deconstructing the creative process in detail, suffice to say that not only did ideas emerge positively (from a creative perspective), the results present an example of rare creative experience, when the results exceed expectations, surprise, and stimulate a rising curve of creative application. When initial creative expectations are neutral rather than low, if the initial ideas lead to a positive feedback loop of recognition and enjoyment (appreciation of results), the creative process can gain traction and lead to increasing engagement and application.

Unknown Mechanism emerged better than anticipated because the creative process went better than expected. The creative process drew me in, almost seduced me into progressively switching off other cognitive processes

and mental attention to other things. Whilst the very beginning of the creative process was marked by a level of ambivalence, the peak of creative experience was amongst the most focused and invested. Quite simply, this is one of the creative artefacts with which I remain most satisfied, partly because of the experience of that ramping up of interest, but also because the perceived qualities, and potential for further development, of the resulting ideas, is judged to be high.

FRy2e



<https://soundcloud.com/cj101-1/fry2e-1?in=cj101-1/sets/own-things>

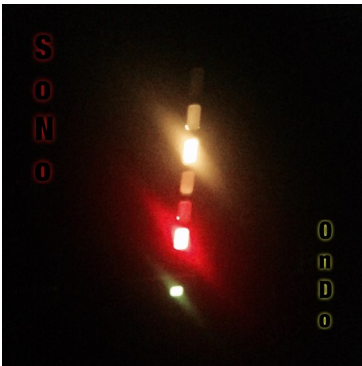
FRy2e mirrored the creative experience of *Unknown Mechanism* quite closely. Albeit significantly less complex compositionally, the flow in this creative process was more associated with recording and production fluency. The sound qualities of assembled elements were engaging during the creative process to the extent that the limitations of time became reconciled by the perspective that this was very much the sketching of a plan rather than the completion of an idea. As with *Unknown Mechanism*, ideas emerged quickly and in a way that engaged creative interest.

Whilst there is a degree of separation between *Unknown Mechanism* (Week 5) and *FRy2e* (Week 11), the recollection of the former creative experience of the first undoubtedly informed the approach taken to the latter. In the case of *FRy2e* though, it was the production qualities that were quickly identified as the primary strength. Consequently, a focus on the development of musical ideas was transferred from notes to sound characteristics.

Blip

<https://soundcloud.com/cj101-1/blip>

Blip was another example of creative processes exceeding expectation from an un-predetermined starting point. As with a number of other creative experiences, creative process was enjoyable precisely because the documentation of ideas stimulated ideas and engagement. As with a number of others, this musical sketch is one that will be returned to for further development and completion.

B1onk1

B1onk1 was the outcome of the last of the series of twelve creative exercises. It is not how the creative project was envisaged to conclude. Thinking ahead, ideas including the recombination and exploration of sound elements and musical ideas developed in the wider project, tangential move to incorporate alternative creative approaches (it occurred to me to record only an improvised musical counterpoint to a live playback of the previous eleven com-

positions, amongst many other ideas), and a sense that previous patterns should be repeated consistently, all featured in thinking. Consequently, creative thinking was at its most cluttered of any point during the project. A balanced counterpoint to the openness and freedom represented by opening weeks, the sense of wrapping up and closing down became stifling. Leaving to one side discussion of aborted attempts to explore some of the clutter, confusion led to the need for another shortcut creative approach. It went wrong and quick solutions were sought. Fragments of an improvised piano performance were edited quickly and framed for publication. Very quickly, and not unsuccessfully.

Creative difficulty, distress, and ambivalence

Whilst constraint was at the heart of the project process framework, established reasonably after a successful two-hour period of creative activity in the opening weeks, the perceived risk of the process from an experiential perspective was initially confined to the potential for the dulling of enthusiasm or energy dependent on the wider personal and professional pressures at play at any given time. Failure and uncertainty being a routine aspect of the majority of creative activities—the experience of perfect flow in creative practice more myth than reality—the level to which periods of low creative productivity or difficulty could become problematic was judged to be low. This was an inaccurate judgement.

Recognising that all creative activity is framed by some form of constraint, however invisible this may feel during peak creative flow, without schema or parameter, creative activity is ultimately rendered mute and made invisible. Whilst creative uncertainty and dissatisfaction is a routine experience of all creative activity, there rarely being creative experiences that flow unimpeded by any one of multiple inhibitory factors, there are occasions where the boundaries collapse in on themselves and become insurmountable. Normally, this would simply lead to abandonment of activity and a return only when ready and prepared to. However, the pressure of a sense of commitment to deadline, no matter what, led to remarkable creative insight. I found that a sense of discipline came very close, if not actually stepped neatly over, what had always been an invisible and unconscious process of creative self-protection.

Whilst I have always sought to embrace creative risk and experimentation, even creative difficulty, I have always managed to manoeuvre myself away from situations of creative harm. I have experienced creative difficulty the developed through practice, but I had never faced inevitable creative struggle square in the face before. I not only knew ahead of time that the process would be unpleasant, the thought of potential for infliction of permanent creative damage was even considered. There was trepidation as well as profound reluctance.

Ephemera

<https://soundcloud.com/cj101-1/ephemera>

Having anticipated and experienced enjoyment from every aspect of preceding creative events, what came as a surprise in the creative process and the research project, was the response to, and experience of, forced creativity. On one evening, the scheduled project activity was undertaken and experienced as the single most unpleasant compositional activity I have ever experienced. On a number of occasions the prospect of having to compose, produce and publish musical ideas under time-constrained conditions was less than welcomed, but on one particular occasion, this ambivalence was so acute as to lead to an almost creative crisis.

It had been so long since I 'had to' produce new musical material, having reached the point of creative activity desiring distraction or unconsciousness more than distracting effort as a means of treating a highly pressured and fatigued mind, my first thought that evening was to defer the creative activity (recalibration of project activity could be undertaken subsequently, and the deferral of potential significance in the overall study), yet I could not shake the focus on the underlying keyword in this work; constraint. I realised that I could not recall, never mind imagine, a frame of mind less disposed to the generation of new musical ideas. My ability, at the point of commitment to the process, to appreciate creative value, never mind to generate musical thinking, was ground to dust. I had worked through an extraordinarily difficult week, was suffering in terms of health, and was in the midst of considerable professional pressures both for my time and for my attention. Focusing my attention to the process of composing music at the point at which this was very much required, felt very much like interrupting a heart surgeon at an extremely delicate moment in order to tell her a joke.

Ephemera was an unpleasant creative experience. In fact it was probably the most unpleasant creative experience I have ever had. I've experienced disappointing and unproductive periods of compositional activity many times

before, and faced creative blocks when ideas seemed to evaporate for periods of time, but I have never composed music so unwillingly or ever faced the situation where I felt compelled to do so before. As such this was amongst the most unique creative experiences of this project and perhaps the most unanticipated. To have spent two hours of my life doing the very last thing in the world I wished to do despite having complete control over the decision reveals either a dedication to an art, a commitment to a research project, or abject disregard for personal well being.

The preceding working week leading up to the creative event could not have been more perfectly designed to inhibit creative thinking and energy at the designated time of creative work. From disrupted travel, physical illness, to wider professional challenges focusing both thinking and attention on other issues, and compromising energy, time, and general capacity on every possible level, accompanied by the onset of winter, near peak limitation of daytime sunlight hours, the wider context of creative activity could not have been more challenging. I simply didn't want to do it. More than that, I recognized ahead of engagement that the process would not only be unpleasant, it would inevitably make a difficult situation worse. It was only that point that point that I realized I had never composed music under those conditions before. With the additional commitment to the research project, I decided to engage with the process. I had the weekend to recover if creative damage was done.

The process was creatively painful and revealing of entirely new creative experiences. Different from simply being forced to compose music, the self directed nature of the negative experience was akin to a painful yet self inflicted itch that could not quite be reached to scratch, or a tantalizing threat of a sneeze that does not realize that was self induced. All the while wanting to escape, to run away, do something else, I nevertheless stuck to the project parameters and attempted to get through the process as quickly as possible.

The creative process involved every shortcut of which I am familiar. Selecting generic sound sets and synthesizer settings, I simply wanted to capture the simplest possible patterns and structures and to turn away. To accomplish this, the stylistic parameters were simplified, generic percussive patterns selected, and formulaic harmonic progressions developed. Nevertheless, the process remained arduous and unpleasant throughout. With seemingly no receptor of appreciation sparking on any level whatsoever, the whole creative process felt akin to practising taxidermy as a vegan. I felt allergic to musical creativity.

I consider the results awful and these as representative of a deeply unpleasant creative experience. They are nevertheless presented as a unique insight into what the experience of unpleasant creativity like this sounds like. I tried to do the best as I could despite the experience. I selected an optimistic and hedonistic musical form, I selected and modelled patterns and conventions, but floundered in a resentful way throughout.

Blah blah blah

<https://soundcloud.com/cj101-1/blah-blah-blah>

Whilst *Ephemer*a was a notably unpleasant and unusual creative experience, a certain degree of difficulty or distress or duress was routine in the majority of creative events. Indeed, as has already been highlighted, no creative process develops without uncertainty and no creative success achieved without some transcendence of boundary.

BLahblahblah is an example of a track where the image was developed ahead of the musical creation process and creative anticipation was quite high. I had an almost complete musical idea worked out that resonated pleasingly, for me, with the predetermined title and cover image. The distress in this case corresponds directly with difficulty in realising established musical ideas. I could hear how it should sound and feel, and I simply could not realise this through the compositional process.

Chalking this up very early in the creative process as ‘just one of those days’, everything from technical problems to distractions in the working environment seemed to occupy the foreground of attention almost immediately upon attempted creative focus. The selected sound environment is not quite right, the rhythmic feel does not quite ‘sit’, the production balance is poor, and whilst wrestling with these dilemmas, other developmental ideas were either lost or not forthcoming as attention was increasingly drawn towards ‘correction’ rather than extension. Within the first few minutes of the creative process, corrections began to be made. This got worse.

Cr33p



<https://soundcloud.com/cj101-1/cr33p>

Cr33p, whilst judged to be a relatively successful outcome, was nevertheless challenging in development. Confined particularly to certain compositional and production elements, difficulties were encountered realising ideas precisely and effectively. These became distracting and counterproductive distractions almost immediately. The focus became problems and ‘not-quite-right’ more than opportunities and ‘what next’. It is the composition that drifted furthest from the imagined ideal. I simply could not make it sound as I wanted, or translate ideas effectively with the materials available.

B33p



<https://soundcloud.com/cj101-1/beep>

B33p is simply a prime example of laziness in creative practice. It was not an unpleasant creative experience as much as an ambivalent one. I simply went through the motions and it sounds like it. I got lazy and in this case, laziness led to creative sloppiness.

Creative reflection and evaluation

“It is not the critic who counts; not the man who points out how the strong man stumbles, or where the doer of deeds could have done them better. The credit belongs to the man who is actually in the area, whose face is marred by dust and sweat and blood; who strives valiantly; who errs, who comes short again and again, because there is no effort without error and shortcoming; but who does actually strive to do the deeds; who knows great enthusiasms, the great devotions; who spends himself in a worthy cause; who at the best knows in the end the triumph of high achievement, and who at the worst, if he fails, at least fails whilst daring greatly, so that his place shall never be with those colds and timid souls who neither know victory nor defeat.”

— Theodore Roosevelt, *The Man in the Arena*.

Analysis of creativity under constraint has an immediate a natural home in music. By almost every definition, the success or failure of musical ideas rests with establishing an appropriate balance between convention and innovation, between predetermination and inauguration. Music, as Merker identifies, is ultimately able to generate “infinite pattern diversity by finite means” (in Deliège & Wiggins, 2006, p. 31), and represents a dichotomous cultural space where creative ideas are constantly renegotiated on the wave front of known and unknown, familiar and unfamiliar.

Music is a significant example of the simultaneously constrained and unconstrained activity, with a constant push and pull, back-and-forth, between a stretch to new territory and a snap back to familiar ground, both within individual practice, and correspondingly with wider cultural systems. Indeed, citing Belker (2002), Merker (in Deliège & Wiggins, 2006), identifies that if novelty itself was a predominant factor in determining the quality of musical ideas, it would be difficult to account for the value gained from returning to familiar and previously known musical ideas (p. 25). Yet it remains the pioneers and the innovators who become most prized and most celebrated.

The creative peaks and troughs of the twelve creative sessions involved in this project were more pronounced than had been originally anticipated. And, as with all creativity, it is the unanticipated and surprising that often provides the most focused and fertile ground for interest and analysis. The most fluent and productive creative activity exceeded expectations, and led to significant periods of creative fluency and flow, whilst preconceptions and understandings of the baseline of creative experience and output quality was given cause for significant re-evaluation; the most negative creative experience being unlike anything ever experienced. Originally intending to focus more analytically on the musical products of creative activity, it was the experience of creative process that became the more significant factor in this

project. The act of musical composition providing a forensic opportunity to evaluate wider constraint factors inhibiting creativity and creative experience.

As observed by Carson (et al, 2003), focusing on the relationship between latent inhibition-- the ability to “screen from conscious awareness” unwanted stimuli--and creative achievement, whilst it is tempting to consider how an exaggerated focus of attention might inhibit creative thinking, reducing the opportunity for new conceptual connections to be established, evidence from studies nevertheless indicate that low levels of latent inhibition generally correlate with high levels of creative achievement. Highlighting a distinction between different conceptions of inhibition through ‘effective inhibition’, ‘disinhibition’, and ‘adaptive engagement with inhibition’ (Benedek et al, 2012), all forms of inhibitive experience were experienced fully during the course of this project.

Creativity and play

Human beings being notable for continuation of play into adulthood more than any other species (Nowell, 2016), this capacity is perhaps most straightforwardly explained by the copresence of cognitive and practical opportunities for play. We not only have the intellectual capacity for play, we encounter more regular and sustained periods of opportunity for imagination to wander free from other distraction. This freedom leads to creativity. As soon as cognitive space is made available, possibilities emerge. Most are momentary, fragmentary, and ultimately lost, but many find ways of being captured, or become transferred over time into definable domains. Play and playfulness is the first expression and basic definition of creativity. It is the capacity to wonder in practical and transferable ways, and the ability to capture and apply insight, that defines our species and accounts for all of human progress.

The initiation of this project being driven by a simple desire to play creatively and to document this process, the aims broadly focused on exploring the creative process of musical composition and the experience and impact of imposed constraints. Developing into a more focused exploration of the relationship between compositional process and outcome limited by time and consistency of creative space and resources, the wider circumstances influencing creative activity, whatever the attempts made to shield these from overtly influencing the creative activity, inevitably crept in providing both the most destructive and most valuable influence. Seeking to play from the outset, it is the capacity for, and receptiveness to, play, that can be most inhibited by subtle factors beyond tools, space and time.

The connection between creativity and play is widely documented and almost intuitively understood; it is how we become who we are. From Lieberman (1977), who stresses the close connection between creativity and play, Bateson and Martin (2013) cite examples from Nobel Prize winning scientific researchers (Fleming, Delbruck, Feynman), artists and musicians (Escher,

Picasso, Mozart), who have identified quite explicit association with play their work. Even, in the case of Richard Feynman, a clearly documented lament at the lost memory of science as a purely whimsical and interest led pursuit as he reflected on the loss of enjoyment from his work (1985, in Bateson and Martin, 2013, p. 58), echoing factors involved in the inception of this project.

Highlighting how many of the facets of play--a willingness to improvise, to break the rules, an openness to novelty--are integral to the very definition of creativity, Bateson and Martin (2013) identify ‘play’ according to the following criteria:

- “the behaviour is spontaneous and rewarding to the individual
- it is intrinsically motivated and its performance is a goal in itself
- the behaviour occurs in a protected context when the player is neither ill nor stressed
- the behaviour is incomplete or exaggerated relative to non-playful behaviour in adults
- it is performed repeatedly” (p. 2)

Given that only the first of the twelve creative events in the project documented here conform to the majority of these criterion, and a number align with none other than that referring to repetition, the presence of play was at best fragmentary and at least compromised for the majority of this study. This may well account for the entire collapse of creative motivation and fluency on occasions. The repetition and routine itself providing both a space for sanctuary and cause itself of inhibition and almost traumatic experience when creative activity was mandated at acutely unreceptive points.

Creativity, whether defined using Guilford’s framework of convergence and divergence (1952) or Torrance’s (1972) extended focus on fluency, flexibility, and originality (Bateson and Martin, 2013), nevertheless represents the application of imagination in the development of definable or determinable outcomes, and was, ultimately, realised on each occasion of compositional activity in these terms. Nevertheless, the compositions characterised by highest levels of creative flow and peak experience corresponded directly and routinely to those experienced most playfully, and the less playful the activity, the lower the perceived quality of musical results in general terms as well as creative experience.

Working creativity

“Choose a job you love, and you will never have to work a day in your life.”
—Confucius

Citing Stokes, Paul and Kaufman (2014) identify “cognitive playfulness and cognitive workfulness” (p. 171) as prerequisites for successful and pur-

poseful creative endeavour. All creative activity being constrained at least by some framework of convention in order to be realised and recognised—compromise being necessary to conform with some level of predetermined expectations—the pressure of constraint and boundary contributed to the development of creative insight in this project, reflecting the freedom/constraint paradox recognised more widely (Rosso, 2014). Whilst it can be tempting to associate creativity particularly in the arts with unstructured and free activity, the imposition of boundaries and more concrete objectives can aid creativity. Indeed, as observed by Biskjaer & Halskov (2013), ‘decisive constraints’ can themselves lead directly to innovation.

The ‘workfulness’, the discipline and conformity, the limits and boundaries, provide both for the perfect conditions for creative insight, and a challenging environment for a sense of play. Nevertheless, the desire to transcend the constraints of boring or even negative constraints (to break free) can be a powerful, and the creativity of subversive behaviour can be reward in and of itself. Focusing on the intrinsic rewards and experience of different forms of activity, Csikszentmihalyi (2014) highlights the direct connection between creativity and play in the development of creative ‘flow’ (p. 135). Play being the exercise and application of imagination, and imagination being simply the ability to “mentally transcend time, place, and/or circumstance” (Taylor, 2013: 3), the experience of flow itself is characterised by the transcendence of time, the perceived ease and fluency by which creative ideas and creative processes align, leading often to a wider experience of serenity and calm. Creative flow is an empowering and rewarding experience and can often emerge when overcoming problems as well as when dealing with perfect creative conditions.

Creativity in music is multifaceted and undoubtedly workful in being domain centred and stylistically appreciable. As observed by Burnard in Odena (2012), multiple creativities are present in music each subject to greater uncertainties of definition in the context of technologically and socially situated musical creativity. There being tensions between established cultural systems delineating forms of musical creativity, and the proliferation of new forms of collective musical creative activity, the simple involvement of networked computing in creative activity creates ambiguity and uncertainty. Computers make everything and nothing possible simultaneously. On the one hand, the range of choice too broad, distracting attention towards filtering of options and possibilities, on the other, the opportunity to focus attention on fine details and to access parameters with which to play can provide fertile ground for creativity and inventiveness.

Creative pain and elevation

The single most unusual experience of this project was that of the most acute creative duress. Having sought initially to ring-fence time to defend and protect creative space, the mandatory aspect of compositional activity on oc-

casions became acutely stressful. Providing a stark indicator of the impact of wider personal circumstances on creative motivation, the experience of creative distress, whilst not an unfamiliar experience by any means, was nevertheless concentrated by the project parameters and consequently experienced in almost visceral terms.

On one occasion in particular, the process was so precariously balanced on the boundary of abandonment to have created almost creative crisis. I have never composed music so unwillingly or found the tools at hand so inhibitory or unintuitive to operate. I learnt nothing, gained nothing, and produced low quality ideas. Only on reflection is it possible to gain any form of value in terms of a better understanding of creative self and the need to evaluate approaches to creative practice in the context of wider responsibilities and distractions. Distinct from the experience of ‘writer’s block’ (Flaherty, 2004), an experience familiar but not actively encountered in this project except fleetingly where creative flow dipped to low levels, in general the difficulty developing pleasing musical ideas tended to correlate with periods where motivation to succeed was also extremely low. There was not so much an experience of frustration at difficult points, as resigned misery. At times, ‘cognitive flexibility and persistence’ (Gutnick et al, 2012) was dulled to the point of negligibility.

However, whilst perfect circumstances may not have been established at any point in this project, constraint and even difficulty did lead to creative insight and creative elevation and flow. On more successful occasions, creative elevation, or the experience by which a high degree of germinality is experienced in the development of musical ideas, occurred quite spontaneously, often in the face of uncertainty or even disinterest. On numerous occasions, the translation and documentation of musical ideas—the programming of sound events and related signal processing—led to results deviating from that originally envisaged, but in pleasingly unexpected ways. The sensation of following the composition rather than dictating it is perhaps the simplest way of articulating the distinction between creative elevation and creative flow or peak experience. Whilst progress may be difficult, sometimes the musical ideas seem to come alive by themselves and determine their own development and direction. Such experiences occurred in conjunction with creative flow and high levels of creative enjoyment, but also occurred unexpectedly during periods of creative uncertainty, pressure and stress.

Summary and conclusions

Considering the notion of creative transference, and the extent to which creative expertise can be translated across creative domains, initial assumptions about the inhibition of creativity as a consequence of the practical challenges of professional life may well be somewhat misplaced. Whilst of course there is an inevitable compromise over autonomy in the vast majority of pro-

fessions and life circumstances, and consequent reduction in time available for many activities, personal creativity is ultimately a matter of choice not of circumstances. One of the most significant realisations resulting from this project is simply that many of the same patterns of thinking and doing I associate with compositional activity, I also associate with approaches to other non musical activity. Quite simply, I have transferred aspects of the way I work musically into other activities, and manage to accept long periods of time between explicit acts of musical composition because I retain the ability to develop musical ideas with complete freedom, and have avenues to direct my predisposition towards aesthetic manipulation and communication of concepts and ideas in many other areas.

Whilst opportunities for play—creativity for creativity’s sake—may become scarce for many reasons, they never entirely disappear. As with creativity, play is a matter of choice not of circumstance, and whilst the inhibitory factors depressing playfulness may well be acute to the point of being insurmountable on occasions, there can be value in deliberate acts of play from a personal well-being perspective. Indeed, there simply not being the time may be the very reason to make time. Whilst some creative activities in this project proved to be negative or to incorporate at least difficulty, there was in general benefit evident in the creative routine perceived in overall terms. From positive reflection of a creative event providing an obvious boost to mood, the background anticipation of forthcoming compositional activity also developed a structured framework for musical thinking and ideation. From aimlessly imagining musical thoughts, more focused and more playful musical thinking developed throughout the project. Perhaps most importantly, there was a sense of creative identity being rediscovered and reaffirmed.

Ultimately, this project became a journey of personal rediscovery, reflection and evaluation. Whilst not enamoured by much of the resulting musical ideas, there are, nevertheless, a number of elements to which the prospect of future return is enticing. Identifying, pleasingly, that the core of my own creative being remains marked by creative optimism and confidence, when things did not go well, external factors remained quick to be identified and blamed, whilst corresponding success was routinely internalised and claimed in a very personal way. Even in the case of the creative low point in the project, where some degree of recovery was required, the experience has no substantial impact on the perception of subsequent creative activity. There being no expectation necessarily that outcomes would always be positive, there was never a fear of negative outcomes and any subsequent ‘avoidance motivation’ (Icekson et al, 2014) stemming from this.

Reflecting on the questions introduced earlier in this text:

- What happens if you impose limitations on creative activity?

Constraint is inevitable and can provide either a positive or a negative influence on creative activity. Limitation can also be conceived of in different

ways. The limitation of composing purely for piano simply opens freedom to focus compositional thinking in other areas, whilst the liberation of computer-based sound resources nevertheless limits scope for simple choices during the creative process. Limitation necessitates adaptation and subversive approaches to convention in order to reach new territory. Lack of time forces speed of thought, lack of motivation leads to laziness, shortcutting and patterned behaviour, and lack of materials forces appropriation and modelling of ideas; all of which can lead to new ideas that may not have emerged under less constrained conditions. Nevertheless, impose the perfect negative cocktail of constraints on creative conditions, and the impact can inhibit all connection with creative activity and invert all usual associative experiences.

- Why are there limitations on creative activity?

Limitations, or at least boundaries, are necessary both to define the creative activity and to determine the framework through which it can be subsequently evaluated. From the perspective of this project, compositional methods returned both to familiar patterns of working and to known sound sources and musical language. Perhaps the ultimate limitation being that of creative self, whilst this is hoped to be full of as yet undiscovered possibility, the familiarity of personality, or creative idiolect, is a necessary and inevitable commonality in all creative activity.

- Are creative inhibitors real?

Beyond practical inhibitory factors, and those conceptually with potential to enrich as much as compromise creative activity, lie the most erosive and destructive; the imagined. Albeit experienced very much as an almost concrete cognitive barrier, the mental capacity to even open thought processes to creative ideas can be hugely disrupted given appropriate external pressures. Whilst creative flow is effortless and even rejuvenating, creativity requires energy to begin. Physical fatigue itself is not necessarily problematic, and indeed can contribute towards development of more relaxed states of mind, but mental fatigue can be extremely difficult to overcome with anything other than sleep. Consequently, whilst invisible, the most inhibitive factors encountered during the course of this project were not time, routine, or the commitment to publication, but were always those related to the level of creative energy available. Where personal circumstances provide opportunity carve out time for creative pursuits, there may also need to be supplementary attention to the maintenance of creative energy and motivation.

- What are the implications of creative inhibition?

From a personal perspective, the implications of creative inhibition related to the loss of motivation or even negative creative experience, are trou-

bling. That an activity such as the composition of music could move from being an effortless, accessible, and relished endeavour, to become a marginalised, difficult and even traumatic experience depending on the circumstances involved, is at least a disappointing point to reflect upon. Nonetheless, the affirmation experienced through more a structured compositional routine provides more than sufficient compensation. The implication of creative inhibition is simply adaptation. Solutions will be found to limit negative creative experience not by avoiding the activity, but by altering the process. The parameters will be loosened and a focus on rejuvenating playfulness in creative methods will be explored. Not for the sake of creativity, but for the sake of play. Whilst there may well be a close association between creativity and nightmares (Hartmann & Kunzendorf, 2013), to live without creative practice would be unthinkable.

“Creative work is not a selfish act or a bid for attention on the part of the actor. It’s a gift to the world and every being in it. Don’t cheat us of your contribution. Give us what you’ve got.”
— Steven Pressfield (2002)

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Michael Brown is the Programme Leader for the BA (Hons) Music degree in the College of Arts, at the University of Derby in the UK. He holds diplomas in both Art and Music, a BSc (Hons) degree in Software Engineering, Mathematics and Music, and a Masters degree in Contemporary Composition, which combine to serve his interest in computer creativity. He is a Principal Researcher with over twenty-five years of teaching experience, an active artist, composer and musician. As well as maintaining his professional role, he is a member of the American Creativity Association and has presented his research in multimodal creativity internationally.

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