



CREATIVITY IN PRACTICE

An exploration of ecologies of
practice and performance

ACCOMPLISHED MUSICIANS



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CREATIVITY IN PRACTICE

COMMISSIONING EDITOR'S INTRODUCTION

In this issue of Creative Academic Magazine (CAM9) we are exploring the idea that when we are involved in a difficult challenge, our mind and body does not just inhabit a physical environment, rather, we are immersed in that environment and we change it through our own participation. From an environmental perspective it does not make sense to talk about the environment in which we are learning and trying to achieve without reference to ourselves as the organism that is perceiving and interacting with the environment.

Proposition 1 : we, our challenges and our environment are indivisible

'Every organism has an environment: the organism shapes its environment and environment shapes the organism. So it helps to think of an indivisible totality of 'organism plus environment' - best seen as an ongoing process of growth and development' ^{1:20}

Learning how to perceive the environment and find meanings in what is perceived, and then act on those understandings in ways that are beneficial, is fundamental to the very existence of an organism and its ability to flourish. The same applies to people. If we focus on the world of a practitioner, learning how to perceive the environment and find meanings in what is perceived and then act on those understandings in ways that are beneficial is at the heart of being an effective and productive practitioner in any field.

Proposition 2: the way we sense and perceive our environment and the problems, challenges and opportunities it contains, is through an ecology for learning

The use of the ecological metaphor to characterize complex practice and performance involving learning and achieving, is an attempt to relate a whole thinking, feeling, acting (performing), person to their circumstances and contexts, their needs, desires and purposes (immediate and longer term), the situations they are dealing with and the particular places they are learning and performing in.² When someone encounters a new situation, problem, challenge or opportunity, they use their senses and their mind's interpretation of the flow of information and context to perceive and comprehend the situation and act in ways that are appropriate. Effectively, they create, inhabit and sustain an ecology that enables them to interact with their environment, which they are co-creating, and the particular things that matter to them in order to understand, act (perform) learn and achieve. (Figure 1).

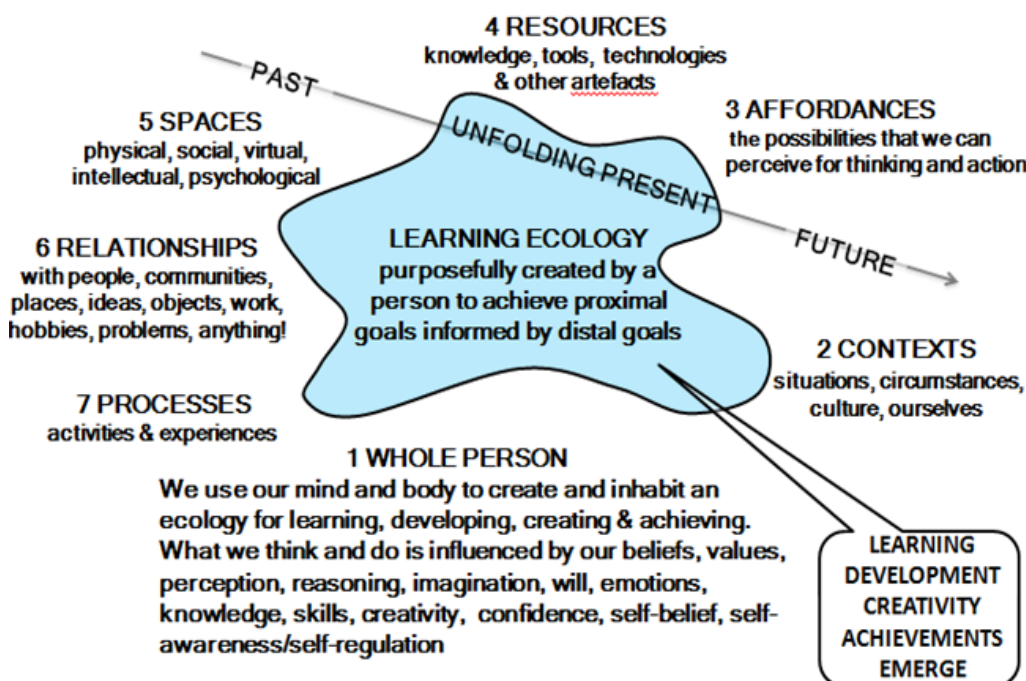


Figure 1 Framework for appreciating the components of a learning ecology²

'An individual's self-created learning ecology grows from the circumstances (contexts and situations) of their life and is established for a purpose that is directed to accomplishing proximal (immediate) goals connected to more distal goals. Their learning ecology comprises themselves, their environment, their interactions with their environment and the learning, development and achievement that emerges from these interactions. It includes the spaces they create for themselves, their processes, activities and practices, their relationships, networks, tools, other mediating artefacts and the technologies they use,

and it provides them with affordances, information, knowledge and other resources for learning, developing and achieving something that they value.'^{17:72}

Proposition 3 : Our ecologies for learning connect and enable us, as a whole person, to physically, intellectually and emotionally interact with a complex environment in order to engage with the problems and challenges we care about.

Our ecologies for learning involve ourselves with unique past histories, personalities and capabilities, unique learning trajectories and unique sets of interests and purposes interacting with complex environments often containing challenges and problems that require unique solutions. It is little wonder that in such circumstances there is considerable scope for personal creativity to flourish.

Here we might draw on the ecological definition of personal creativity proposed by Carl Rogers which he considered to be 'the emergence in action of a novel relational product growing out of the uniqueness of the individual on the one hand, and the materials, events, or circumstances of their life'³. This concept of creativity connects individual, their interests and the problems they care about and the whole environment in which they are participating.

So how does this particular issue of the magazine engage with these ideas?

In the last issue CAM 9C, we used an account of an orienteer to evaluate the idea of an ecology of practice for performance. It opened up the idea that an ecology of practice both prepares people for performing in a particular field and enables them to perform in a particular situation. I wanted to explore further the idea of ecologies of practice for performing and in this issue we draw on the written narratives of two highly accomplished pianists.

Christina Kobb studied piano pedagogy at the Norwegian Academy of Music (NMH) before she shifted her focus to historical performance practices. Her doctoral research on 19th century piano technique was featured in the New York Times and presented at places like Harvard University and Duke University. In this issue we have combined published in CAM #8 with the title 'Eyes on your fingertips: Change perceptions, cultivate creativity, enhance performance' and an extract from a second article published in Lifewide Magazine #18 titled 'Keys to systematic exploration - a pianist's perspective'. Together they provide wonderful insights into how a world class musician radically changed her practice.

Emelie Crapelet contributed to the work of the Surrey Centre for Excellence in Professional Training and Education, at the University of Surrey when I directed the centre. We organized a conference around the idea of 'Immersive Experience' and she wrote a wonderful article for our conference programme on what it was like to be a pianist immersed in the experience of recording a particular piece. We have republished the article here as it provides wonderful insights into how people with different skill sets collaborate to make a recording. So I am grateful to John for taking the trouble to make contact after all these years and delighted with this collaboration that emerged from our reunion.

Christina and Emelie write with exceptional insight and sensitivity to the ecologies they create when they practice and perform.

Citations

- 1 Ingold, T. (2000) *The Perception of the Environment Essays on livelihood, dwelling and skill* Routledge: London
- 2 Jackson, N. J. (2016) *Exploring Learning Ecologies* <https://www.lulu.com/>
- 3 Rogers, C.R., (1960) *On becoming a person*. Boston: Houghton Mifflin

NORMAN JACKSON

COMMISSIONING EDITOR



If you would like to contribute an article about your own practices in any aspect of your life be they work, hobbies and interests, or any other activity, please contact the commissioning editor :

Eyes on your fingertips: Change perceptions, change practice, enhance creativity & performance

Christina Kobb



Christina studied piano pedagogy at the Norwegian Academy of Music (NMH) before she shifted her focus to historical performance practices. After studies in Germany, the Netherlands and the US, her doctoral research at NMH on 19th century piano technique was featured in the New York Times and presented at places like Harvard University and Duke University. In 2013, Christina was appointed Head of Theory at Barratt Due Institute of Music in Oslo, but left the position last year to pursue performance and research. Currently, she teaches occasionally at the Norwegian Academy of Music and is co-founder and editor of the Open Access journal *Music + Practice* (www.musicandpractice.org). Her Carnegie Hall recital in February of 2017 was reviewed by Michael Miller of New York Arts as “an especially rich debut concert for New York—rich in scholarship, thought, sensitivity, musicality and maturity”.

Editor *This article combines an articles written by the author published in CAM #8 with the title ‘Eyes on your fingertips: Change perceptions, cultivate creativity, enhance performance’¹ and an extract from a second article published in Lifewide Magazine #18 titled ‘Keys to systematic exploration - a pianist’s perspective’². Together they provide wonderful insights into how a world class musician radically changed her practice.*

Introduction

Piano technique consists of a number of finely tuned movements and interactions of movement by my arms, hands and fingers. When researching piano playing in the early 19th century I realized that the basics of piano technique were quite different back then: they were more explicitly articulated and more rigid. In other words, the instructions concerning basic posture and movements were significantly different from any modern approach to piano playing. I was already playing historical keyboard instruments, but now I became curious. Would my playing change if I changed the actions of my basic technique? I decided to try this in order to explore how 19th-century music might have sounded when played at that time. By consciously changing my technique, I forced myself to explore the music through my body in ways I would not have conceived of otherwise. It was like getting another pair on eyes, on my fingertips!

Creativity and rules

In this article I will address a particular and systematic approach to creativity that I have developed in my own practice. Counterintuitive as it may seem, it involves applying rigid rules for the interaction between my body and my instrument. As in many other practices, the basics of technique are typically learned at a young age, and becomes habitual, somewhat automated. After 25 years of playing the piano it was quite drastic to start all over again and relearn all the basic movements of piano playing. However, quite differently from learning as a child, I did it this time with my conscious, analytical mind to guide the process. I will explain how I identified and changed all the basic motions of my technique, how I was “troubleshooting” to clarify my own improvement potential and what kind of results I experienced. Although there are mental and emotional (as well as music theoretical) aspects to address in this process, my focus this time - chiming in with the overall theme of this issue - is the role of the body in my own creative processes and practices.²

Please do not mind my nerdy historical approach! The possible gain for others who want to develop their creativity is to be inspired by my research and consider establishing a system for themselves that *upsets* their established norms and habits. If you think that creativity blossoms the most in complete freedom, think again! Creativity may actually have a better chance at producing an attractive result if you consciously “train it” (like you train a climbing rose on a trellis) along some sturdy support structures. The restrictions are there to channel all the energy for growth in the direction you want. Simultaneously, “cultivation” implies adequate attention towards promoting and steering growth. In my work, I restricted the freedom of motion to obtain a different result. This quote by composer, pianist and conductor Leonard Bernstein points to another such restriction, namely time. Any restriction, and this holds true for a wide range of artistic and innovative endeavours, may force you to prioritize and “prune” your work. It makes me think of the plants which never flowers, only produce rich foliage, if the conditions are too good.

19th-century learning and the principles of cultivation

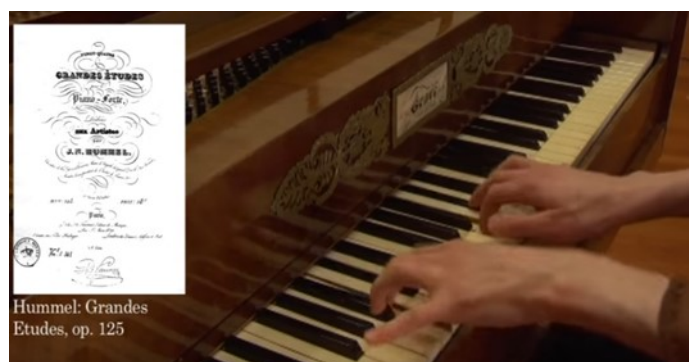
In 19th-century thinking, the body and mind are like a tree, which you grow and prune over a period of time, in order to harvest good fruit later on. First, you are to learn the general principles of the art, and then you apply these in your work continually. Johann Nepomuk Hummel, the most famous and expensive piano teacher in Europe in the 1820s, wrote - after having explained the main principles of his teaching - that “By this method, the pupil will play well what he attempts, and in the end reap the best fruits from his labours”.⁴

19th-century method books in piano playing contain detailed rules for the physical interaction with the instrument, in other words: how the fingers are supposed to press down the keys. I had already specialized in historical keyboard instruments for several years, but nobody paid much attention to the 19th-century rules or even realized that they could be important. I would say that we all played on these old instruments with a modified modern technique, having already been used to modern grand pianos for at least 20 years before we encountered the more feeble historical pianos. Now that I discovered these other rules, I asked myself: If I train my body differently, will it “produce another fruit” - in my case, different music?

To explore this idea, I first engaged in a cognitive exercise. Through careful research my analytical brain identified all the basic instructions on piano technique described in 200 year old German and Viennese treatises, taught them to myself and observed how the phrasing of the music changed under my fingers (I also studied period music theory, but the physical aspect is easier to explain). As soon as I had figured out my technique and my fingers started to adhere to the new movements, I got a kind of dialogue going on between my head and my hands about how to optimize the actions even further. These fine-tunings became obvious as the interaction with the musical material continued, in other words, as I tested the new technique on a greater number of examples.

In this video, you will get an idea of how I worked to relearn piano playing:

<https://www.youtube.com/watch?v=INh84SP6DiA>



Understanding your own practice

There are two paradoxes of my practice that I would like to address. First, it is possible (even common) to have developed highly specialized motor skills, yet be unaware of how to explain them. This may also be the case for any athletic or manual practice, because our body is able to perform complex tasks without much conscious knowledge at all, once the movement patterns have become habitual. We just *know*, we don't know *how*! The second paradox is related to the first: despite the required dexterity, pianists commonly speak about musicality, interpretation, style and

personal sound without addressing the actual motions involved. Maybe we want to focus solely on the artistry and we feel like the magic is lost if we attempt to reduce it to a matter of finger motion? This is, to a certain extent, understandable. Nevertheless, it is interesting to notice that piano teaching in the early 19th century had a much stronger emphasis on the craftsmanship, yet without losing sight of the artistic aim. *My exploration of 19th-century teaching manuals changed my perspective on how to use my body.*

Explanation of the body positions while playing taken from YouTube transcript

<https://www.youtube.com/watch?v=INh84SP6DiA>

03:25 So what are the elements in this technique that I am reconstructed from the sources. First of all it's very important that you sit straight at the chair and your shoulders should not lean forward like this. You should look at the music not the keys that's the ideal and also you should sit so high that your hand your arm will slope down towards the keyboard..... like this and maintaining the index finger as the highest point on my hand. This is done in order that the elbow should stay close to the body even when you ascend like this the this askew position of the hand is a good combination with having your elbow like this so the fingers always go first and you do not move your elbow more than necessary from your body so for instance if you move your elbow here it's very hard to maintain the correct position of the hand and that's an important point of this technique that you have to take all of the elements together also then when it comes to the movement of the fingers they are supposed to move like this moving only the outer joint of the finger like this now you had to excuse my [little finger] a little bit because he hasn't gotten this yet 05:08

It is truly rewarding to invest in understanding your own practice. You must not only know it by automated habits or movement patterns, but also become conscious of how every action works. Most importantly, you must be motivated to improve your performance in whatever field you operate. You need motivation, determination, patience and tenacity because it takes time and concentration to break old habits and to consciously control motions that have been largely automated for many years. Additionally, you need to establish an ideal or a blueprint for your desired outcome, by which you measure your own progress against. When you have a clear vision, you will soon begin to see what actions you can take to improve on your performance.

A practice system

Activities that depend on physical execution, like sports or music making, consist of a number of coordinated movements. In the 19th Century they were loosely referred to as the “system” of any practice. I like to consider the technique as consisting of a “set of interdependent actions”.⁵ There are many possible combinations of arm, hand, leg and foot movements, but at the same time, our physical body sets limitations. For instance, when operating a piano (or any machine), not any hand motion is possible, or expedient, in combination with any arm motion; the actions have a high degree of interdependence.⁶ Hence, the number of basic actions - and combinations of actions -



are limited. Despite the seeming “magic” of a great pianist or sports champion, the complexity of the physical actions is not beyond comprehension; the execution relies on a basic “set of interdependent actions”. In piano playing, each motion of the arm, hand, wrist and finger is such an “action”, where each depends on the other actions required for pressing down the keys and playing the music.

We should understand how the interdependence of actions affects the learning process: Firstly, since we usually learn a skill as an embodied whole, it is often hard to pin down specific weak spots, or perform each action separately. If everything works “just fine”, it may be hard to find the motivation to bring it from “fine” to “excellent” by consciously looking for improvement potential. Further, since you can hardly change one action without upsetting the system, more adjustments are usually required once you alter *one* thing. Conversely, the interdependency may cover up some less than ideal actions - and thus conceal any improvement potential from your view.

How to spot your own improvement potential

After some time of paying much attention to my technique, I started to think in less abstract terms and become more concrete. Reduced to its most basic element, the core question of my practice - piano playing - is: How should the keys be pressed to achieve the best effect on a particular instrument? As the keys and the mechanic construction of a Viennese grand piano of the 1820s is significantly different from a modern piano, I figured it would not be senseless to consider changing my key-pressing method when playing on these historical instruments.



In my case, I had long felt a discrepancy between what I thought I could do and what I actually proved myself capable of doing. I did not reconcile the way I *wanted* to play with how it sounded! Laziness was not the problem, nor was dedication. As a student, I would always get up early, practise before the classes started in the morning, and keep going until the late evening. I had opted for a “narrow path” of music and scholarship, and I moved between four countries to study with the right people and give myself a chance to succeed. I did not exactly know what my problem was, except I suspected that I had too much tension in my playing and a few other subtle flaws obvious only to a highly trained ear. Despite these things, I

operated at a high professional level, but to be honest, I did not really like my playing because I knew it must be possible to do better.

In hindsight, I conclude that my imagination was better than my fingers. In musical terms, we could say that my physical performance was in dissonance with the performance I was able to imagine. Alas, I did not know how to let my fingers create what I vaguely thought should be possible! Likewise, you know your practice and your abilities better than anyone. Therefore, when you feel this “dissonance”, however minor, between what you imagine and how you normally perform, investigate it!

Take a close look at all the movements and bearings involved and ask yourself whether each action is expedient for performing at your peak. In the worst case, a wrong action is actually threatening your potential to perform at your very best. I figured out the entire “set of interdependent actions” of piano technique by oscillating between theoretical reflection, practical exploration and self observation. I got a clear picture in my mind about the various constituents by inspecting each action and gaining an understanding of its overall function. In this process, I explored the *improvement potential* for each action with the goal of enhancing the practice as a whole. I constructed different exercises to practice better ways of executing each action, transition or sequence to optimize the interaction between myself and my instrument. To a large extent, this step actually meant weeding out much unnecessary movement to make the desired actions more effective. This approach gave me insight about *why* something - big or small - works or does not work. Hence, it allowed me to improve my performance systematically, instead of just “hoping I would get better”.



Eyes on my fingertips

I think of the ability to imagine or envision something in your mind as one of the foremost tools of creativity; it is like seeing, hearing and feeling inside your head to anticipate the desired outcome of your actions. When I read a score, I “hear” the music in my head and work out how I want it to sound when I play. Usually, I imagine a sound, a chord, a phrase in my head before practicing the execution of what I just imagined. In my imagination (in my “inner ear”), I establish a blueprint to hold onto when I practice and perform.

Hence, my imagination informs my fingers. But the opposite is also true: hearing my fingers produce the same sounds on the piano over and over again conditions my imagination. A good pianist brings out a large spectrum of timbral nuance, and phrase beautifully (i.e. connect the notes and chords nicely). The downside is that what I cannot imagine, I will not pursue. It may happen by chance occasionally, but it will not be something within my conscious reach. In order to supply my creativity with a wealth of “raw material”, I consciously stretch the reach of my imagination.

Consciously applying a suitable technique was like getting a new pair of eyes right where the action unfolded. The new eyes were able to communicate with my cognitive faculties in a way that had not previously been the case. I was able to match my musical ideals with my performance and it became quite effortless to give the music a beautiful shape when I played. When confronted with the material of your practice (music scores, in my case), the “system” of bodily movements is the lens through which you envision and imagine its shape. Changing the “system”, i.e. the “set of interdependent actions”/the motion patterns, is a way to get a new lens through which you see its shape. Other solutions surface, within the reach of your imagination.

I think of playing music as making sculptures of sound. The creative ability is to “see” a sculpture in a piece of rock, see a possible route on a map that allows you to travel from A to B through a challenging landscape, see a solution to a problem even if no one else sees it. Your eye is unique. Your eye is not “just “ the ability to discern colours and contours and recognize persons and objects (even that is miraculous in itself), your eye is also all of your experience which is uniquely yours, allowing you to look at and perceive a problem - look at the material of your practice - and see ways and solutions no one else may see. Be it the route on a map, a solution to successfully and gracefully performing a prelude by Chopin, the able to envision and cut out a sculpture from a rough rock - your “eyes on your fingertips” have a unique combination of knowledge, skills, intuition (accumulated from hours and hours of close contact with material, tools and technique) and imagination (ability to “see” possibilities inherent in the material). The eyes on your fingertips in close collaboration with your conscious mind make a fantastic team!

You can hear Christina talking about and demonstrating her technique and listen to her ‘Piano Playing in 1820s Vienna’ on an 1825 piano by Alois Graff, Vienna (restored by Edwin Beunk).

<https://www.youtube.com/watch?v=INh84SP6DiA>



Reflecting on the outcome

Instead of just letting my fingers run over the keys in any way they wanted, I began holding them accountable for sticking to the 19th-century regime of posture and motion that I figured out from old method books. This made me realize everything that went on in my body during playing in a new way, and it became as important to make the correct movements as it was to avoid the incorrect (unnecessary) movements. (Like in the garden, we both need to cultivate the good and weed out what is unwanted!) Among the two foremost advantages is 1) being able to plan my rehearsals much better, thereby learning the pieces much faster 2) knowing how to succeed; I know how I must prepare in order to play well. This requires much work, but eradicates all the frustration I experienced when I had no idea why my concerts would at times be very good and at other times quite bad.

By consciously changing my technique, I got was seemed like another pair of eyes, namely those of my fingers. Prior to this, I would imagine the sound of the music through my mind's ears - but this imagination was inevitably limited by earlier memories of sound, as it is hard to imagine a sound you have never heard. But now, with the eyes on my fingertips, I saw things differently. The eyes on my fingertips saw new routes for moving from key to key and shaping phrases. The new-learned movement patterns brought forth sounds and phrasings I had not previously heard with my physical ear, and therefore not been able to imagine or require my fingers to produce. The reconstructed 19th-century technique - a very strict movement regime - had created a brand new alley for musical freedom: one which was not limited to what my ears already knew.

A trail for my creativity to climb on, grow and bloom, had been laid out. I found a new way of creating musical raw material for the interpretation of musical masterworks of the 19th century.

As both our physical and cognitive habits have become firmly established over time, changing them requires much deliberate, conscious effort. How can we be sure that the unknown land we are entering when we try to change our practices is in fact better than the one we already know? We cannot. We have to accept the risk. But when you feel that dissonance between what you can imagine and what you actually produce, it may be worth looking into - perhaps even with the eyes on your fingertips.

My strategy for systematic exploration & changing my practice

In my article 'Keys to systematic exploration'² I described the 'system' I developed, the "set of interdependent actions" (or constituents) on the physical, mental and emotional level respectively, to changing/developing my practice. I define and inspect each action, gain an understanding of its overall function, and explore its improvement potential in enhancing the practice as a whole.

I construct different exercises to practise better ways of executing each action, constituent, transition or sequence. This approach gives me insight about why something - big or small - works or does not work. Hence, it allows me to improve my performance, instead of just "hoping I will get better with time".



My motivation for changing anything at all is that I am simply not happy with the way I played the piano. I figured that to change the sound that was coming out of the piano, I would have to change the sound-creating impulses [created by interactions with the keys and pedals] going into the piano. Here are the various steps, in detail.

- Create a beneficial environment for the exploration process (set aside the time and resources you are willing to invest, in my case my key resources are a rehearsal space with good acoustics and my instrument)
- Break down the matter (the system of operation) into its smallest possible constituents or actions. You may start with the larger actions and become more detailed as you work.
- Isolate and inspect them one by one. Understand the function of each part and how they work together (like you would if taking any motor or apparatus apart).
- Explore the improvement potential of each constituent/action, with the goal of enhancing overall performance. Do not attempt altering one constituent/action without having understood its function in the whole.
- As you work on one constituent/action at a time, observe how various changes affect the system. In fact, a change usually brings an imbalance in the system, which needs to be absorbed by some other action. This may make things worse, or better!
- Explore, experiment, immerse yourself in the various options, considering the operation of the whole from the angle of each constituent/action systematically.
- Explore as many possible combinations as possible (good and bad ones), as this will deepen your understanding of how the system operates as a whole. Besides, you might stumble on some good combinations your logic would not have foreseen.
- Be willing to reject an idea!! A new idea is not always a good idea - run a relevant test and use your good judgement. Do not change without purpose.
- Pay attention to and develop the more promising combinations, exploring the various options on relevant material.
- To change may mean to add something or subtract something. Keep both options in mind when it comes to optimizing your practice.

About halfway into the process, you are ready to set a clear goal for your work. At this point, you know more about the options, and how to make good choices, than at the beginning of the exploration and change process. Keep in mind that when you change something, your body and mind may resist even excellent changes at first, simply because you are not used to them. If you consider making a change that feels odd, just give it a test period, and keep track of how it develops for a few days or weeks before you decide. Sometimes, there is more than one feasible solution. If so, study how each of them affects the outcome - and decide which outcome you find more desirable. In the proofing, also make sure that the option you choose does not come with any unwanted side-effects. Through this systematic process I have learnt.

- Don't mess up more than you're willing to tidy up. Any phase of the exploration process should end with an (intermediate) decision; the three main outcomes being 1) accept 2) decline 3) continue exploration. You may also need the category 'alternative option' (i.e. define the action as not a part of your default system, but useful on certain occasions).
- When you have decided on any new/improved actions or constituents in your system, isolate them once more and construct several exercises for yourself to practice the new elements - and any transitions between old and new elements - specifically. Isolation will keep the "autopilot" from your old system from kicking in.
- Decide on a "proto type" for your system and run tests on relevant material! Adjust where needed. Going back and forth between the actions in your system and the material on which they should operate, is a vital part of creating a successful system. Return to earlier steps whenever necessary.
- Endure the initial discomfort and vulnerability of establishing new habits.
- Keep the overall goal in mind.
- Allow yourself some time to solidify your new/renewed "set of interdependent actions" without excessive strain.

Exploring improvement potential on the mental level

The increased awareness on the physical level gave me some hope that I might be able to increase my performance on the mental level, too. Without going into too much musical detail, here is an outline of how I work on the mental level.

DEVELOP A CLEAR VISION: I practise the various "tracks" of representation in my mind; I see, hear, feel and touch the music without touching the piano. I envision how my hands move perfectly while I "listen" to the sound of the music as I "see" my fingers press down the keys. Often, I add a track of intellectual information, like chord progressions or patterns in various parts, and formal development. I create a unity of the auditory, visual, kinaesthetic faculties in my mind. Any discrepancy between them must be sorted out. When I do this, mistakes are usually ruled out before they solidify in my memory or even reach my fingers.

I practise feeling at ease - and feeling whatever emotion the music contains - as soon as the basic cognitive work is fine. I do all of this over and over with each piece of music, systematically adding "tracks" and layers to the complete picture. I deliberately design the desired result in my explorative state of mind until it becomes my state of being when I perform the music.

Despite all this talk about technicalities and systematic exploration of piano playing, my honest opinion is that music, first and foremost, is about transmitting and sharing human experience on the emotional level. For this reason, I explore how I better can connect with both the emotional content



of the music and with the audience. In the old days, people said that music was the language of the heart. Nowadays, classical music has sadly become more sterile, perhaps due to the recording industry and the many competitions for young musicians.

I think the most important way to advance the emotional state of being while playing is to actually feel the music - first in the practice room and then by daring to share the feelings with the audience. I take Emanuel Bach's advice and actively practise feeling the various emotions in the music. When practising a happy piece, I practise feeling happy until I laugh! In a dark piece, I sometimes practise feeling the heaviness until I actually cry while playing through the piece at home, all by myself. In my experience, this embeds the emotions deeply in a piece and makes it easier to portray it confidently and convincingly when on stage. On a side note, I have one great tip for any hint of performance anxiety (the topic as such must wait for another time): Stay happy. Do whatever you need to keep your mood up. I ignored this fact for way too long. It is very hard to be happy and scared at the same time. Make happiness win!!

Editor : You can find out more about Christina, her research and her playing by visiting her website <http://www.fortepiano.no/en/welcome/> For more on learning in the 19th Century, please see Kobb C (May, 2016): 'The true art of sitting on a piano chair - and other useful hints for 19th-century living', in *Fowl Feathered Review* no. 18, available at: <http://online.anyflip.com/fdyt/yijz/#p=8>

IMAGES ARE FROM CHRISTINA'S WEBSITE

<http://www.fortepiano.no/en/welcome/>

Sources and Notes

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3 Jackson, N.J. (this issue) A Concert Pianist's Ecology of Practice for Performance Creative Academic Magazine CAM9D January 2019 Available at: <http://www.creativeacademic.uk/magazine.html>

4 Hummel: Anweisung zum Fortepiano-Spiele (English translation, 1829), p. V. Conversely, an English colleague, Bernhard Logier, was judged as for his lack of good fruit: "The system" has not produced one good harmonist, or one eminent performer. 'The tree is known by its fruit.'" (The Philomatic Journal (1825), pp. 443-44). The assumed reference is Luke 6, 43-44: "For a good tree does not bear bad fruit, nor does a bad tree bear good fruit. For every tree is known by its own fruit. For *men* do not gather figs from thorns, nor do they gather grapes from a bramble bush."

⁵ I share Theodore Schatzki's postulate that "a practice is, first, a *set of actions*". (Schatzki: 'Practice mind-ed order', in Theodore R. Schatzki, Karin Knorr Cetina and Eike von Savigny (ed.): *The practice turn in Contemporary Theory* (Routledge, 2001), p. 48). However, my focus is in more minute than his, as I like to dissect each activity of a practice into their respective set of actions, whereas Schatzki's take is more general; he looks at the establishing of social order, or by seeing practices as consisting of many general actions: "A practice is, first, a *set of actions*. For instance, farming practices comprise such actions as building fences, harvesting grain, herding sheep, judging weather and paying for supplies". (ibid.)

⁶ One example is elbow position vs. angle of the hand and, consequently, fingering, discussed in my video above.

7 C. P. E. Bach: Versuch über die wahre Art, das Clavier zu spielen (1753). Cited from Essay on the True Art of playing Keyboard Instruments, trans. and ed. William J. Mitchell. New York, 1947.



The Difference Between Ordinary and Purposeful Practice

I have found that no matter what field you study, music or sports or chess or something else, the most effective types of practice all follow the same set of general principles. There is no obvious reason why this should be the case. Why should the teaching techniques used to turn aspiring musicians into concert pianists have anything to do with the training that a dancer must go through to become a prima ballerina or the study that a chess player must undertake to become a grandmaster? The answer is that the most effective and most powerful types of practice in any field work by harnessing the adaptability of the human body and brain to create, step by step, the ability to do things that were previously not possible.

The usual approach to practice

Let's begin by looking at the way people typically learn a new skill—driving a car, playing the piano, performing long division, drawing a human figure, writing code, or pretty much anything, really....

We all follow pretty much the same pattern with any skill we learn, from baking a pie to writing a descriptive paragraph. We start off with a general idea of what we want to do, get some instruction from a teacher or a coach or a book or a website, practice until we reach an acceptable level, and then let it become automatic. And there's nothing wrong with that. For much of what we do in life, it's perfectly fine to reach a middling level of performance and just leave it like that. If all you want to do is to safely drive your car from point A to point B or to play the piano well enough to plink out "Für Elise," then this approach to learning is all you need.

But there is one very important thing to understand here: Once you have reached this satisfactory skill level and automated your performance—your driving, your tennis playing, your baking of pies—you have stopped improving. People often misunderstand this because they assume that the continued driving or tennis playing or pie baking is a form of practice and that if they keep doing it they are bound to get better at it, slowly perhaps, but better nonetheless.

Moving beyond the automated level of performance through purposeful practice

Purposeful practice has several characteristics that set it apart from what we might call "naive practice," which is essentially just doing something repeatedly, and expecting that the repetition alone will improve one's performance.

Purposeful practice has well-defined, specific goals. Purposeful practice is all about putting a bunch of baby steps together to reach a longer-term goal. The key thing is to take the general goal—get better—and turn it into something specific that you can work on with a realistic expectation of improvement.

Purposeful practice is focused. You have to keep working on the particular things that need to be changed until they are changed.

Purposeful practice involves feedback. You have to know whether you are doing something right and, if not, how you're going wrong.

Purposeful practice requires getting out of one's comfort zone. This is perhaps the most important part of purposeful practice. This is a fundamental truth about any sort of practice: If you never push yourself beyond your comfort zone, you will never improve.

The amateur pianist who took half a dozen years of lessons when he was a teenager but who for the past 30 years has been playing the same set of songs in exactly the same way over and over again may have accumulated 10,000 hours of "practice" during that time, but he is no better at playing the piano than he was 30 years ago. Indeed, he's probably gotten worse.

Getting out of your comfort zone means trying to do something that you couldn't do before. Sometimes you may find it relatively easy to accomplish that new thing, and then you keep pushing on. But sometimes you run into something that stops you cold and it seems like you'll never be able to do it. Finding ways around these barriers is one of the hidden keys to purposeful practice.

Generally, the solution is not "try harder" but rather "try differently." It is a technique issue, in other words. The best way to get past any barrier is to come at it from a different direction, which... is one reason it is useful to work with a teacher or coach. Someone who is already familiar with the sorts of obstacles you're likely to encounter can suggest ways to overcome them.

Source

Ericson, A. and Pool, R. (2016) Not All Practice Makes Perfect: Moving from naive to purposeful practice can dramatically increase performance. Nautilus April 21 2016 Available at: <http://nautil.us/issue/35/boundaries/not-all-practice-makes-perfect>

Collaborative Practice

There are many practice situations where people work together in close collaboration to achieve a shared goal and, in the process, co-create an ecology through which they learn how to achieve their goal. In this narrative a concert pianist describes how she worked with a group of talented university students to make a high quality classical recording of Chopin's 4th Ballade (for solo piano) to include in their respective professional portfolios.

Editor

Ecology of Practice for Recording and Performing a Piano Recital

Emilie Crapulet



Emilie is Professor and Head of Classical Performance at the University of West London. She regularly gives solo and chamber music recitals in international music festivals and concert halls in Europe, the USA, Canada and Latin America. In addition to her busy solo career, Emilie has built a strong reputation as a lecture-recitalist and guest speaker. She gives illustrated talks on the relations between music, literature and painting in international literary and music conferences and has recently been invited by Glyndebourne to give pre-performance lectures on their operatic touring season. At the time she wrote this article in 2008 she was studying for her doctorate at the University of Surrey.

The recording project that I describe in this narrative, was a true journey of discovery. It was a challenging undertaking that necessitated total engagement and concentration and the use of many skills - musical, technical, technological, creative and relational. It involved good preparation, good [technical] skills and an open enquiring mind..... We were plunged into a world in itself, with its own time-scale, its own space, and a complex problem to solve, which prompted us to respond with enthusiasm and dedication, revealing a rewarding and inspiring process of investigation, enquiry and revelation.

This project involved students from all years and backgrounds, thus cutting across the usual disciplinary boundaries. [The main people involved were] the pianist (myself) a PhD student (music), Tonmeister final year BMus student and a producer, MMus Production Module student. Others involved included an assistant to the Tonmeister (first-year BMus Tonmeister), observers (other MMus Production Module students) and a lecturer who was there for advice but who did not directly participate in the recording. Even though we each had specific technical knowledge and an individual role to play in the process, we were also very much aware of each other, constantly interacting with one another and learning new skills. Overall, the atmosphere of the whole project was particularly exciting because we felt that we were doing something worthwhile and meaningful.

Tonmeister spans both art and technology: working with musicians on a musical level to help them achieve the best performances and interpretation; and utilizing or directing the use of appropriate technology to produce the most communicative experience for the listener, including appropriate editing, sound balance ...



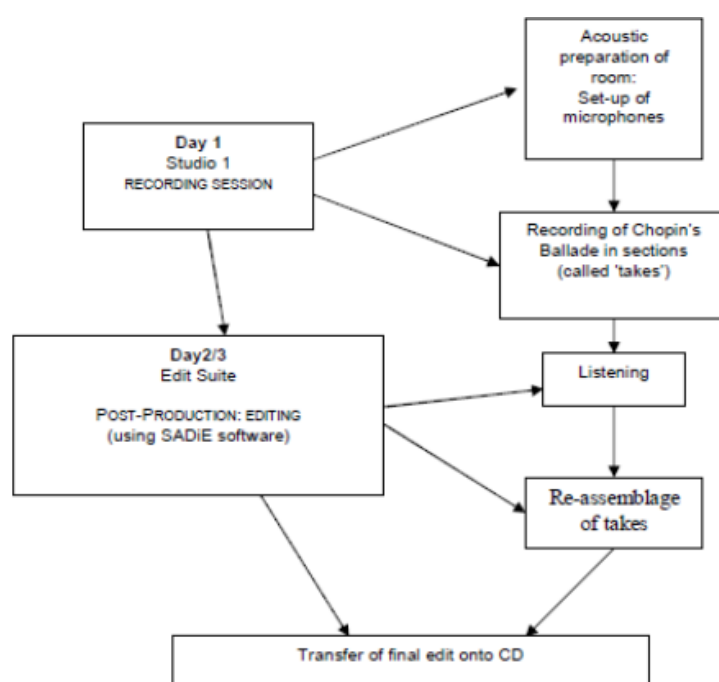
Our objective was to produce and edit a high quality classical recording of Chopin's 4th Ballade (for solo piano), one which combined a good sound quality and a good performance. A good recording should make the listeners feel that they are sitting in a concert hall hearing a live performance, but without those distractions and potential flaws which can sometimes mar the concert experience (background noises, performer's mistakes, etc.).

Figure 1 Chopin, 4th Ballade, op. 52 - facsimile of the score of bars 1-16 (score downloaded from www.sheetmusicarchive.net)

The context was particularly conducive to good team-work and collaboration. We were all, in some way or another, seeking to achieve the best possible result, primarily because the whole process was not a purely academic exercise, but it was intimately linked to the practice world of recording classical music outside higher education. Not only was the recording to become part of our portfolios of recordings (which we shall be using as demonstration CDs for many years to come), but it was also conducted within a professional recording studio. It was particularly motivating, for instance, to have access to some of the most up-to-date technology in used in the recording industry. We thus discovered together the ins and outs of SADiE, for instance, the editing software we used at the postproduction stage. The Tonmeister student was familiar with this software as it was used in the (mainly classical) Chandos CD company with which he did his placement year. He was therefore able to show us how the programme worked in great detail as well as give us insights into his experience of his placement year.

Such a complex project, involving so many different skills and people, necessarily put us to the test and challenged our creativity. From this experience, we learnt first hand which qualities are fundamental to any form of inquiry that takes place within such a close-knit immersive experience: how to work together as a team, how to listen to each others' opinions in order to discuss the issues constructively, how to sometimes allow for compromise and how to always have an open, positive and dynamic attitude.

Figure 2 The recording process took place over 3 days
A studio recording could best be described as a musical jigsaw puzzle - my performance is split up into sections during the recording session and then reassembled during the editing process. We aim to have at least two or three good 'takes' of each section from which we can choose when editing the piece.



Playing to a forest of microphones is not like playing to a live audience. In a recording studio, the musician relies exclusively on the producer and the sound engineer to achieve the best possible result. The latter is responsible for placing the microphones to ensure the best quality sound is captured during the performance.



In order to be good, a classical recording must not only be note-perfect, it must also sound spontaneous and natural - something which is particularly difficult to achieve in what are often clinical studio conditions. At this stage, the producer's role is very important as [they have] the responsibility for noting down on the score all the errors and potential retakes. Throughout the session, the Tonmeister also keeps a detailed record of all the takes we make (take numbers, bar numbers, sections played, quality of take, timing, etc.) so as to be able to locate them as fast as possible in the final editing phase of the

project. In this way, at the editing stage, we will not have to listen through the whole 4 or 5 hours of recording in order to find the one we want each time. The producer and the Tonmeister's work at this point is crucial from my point of view, as I cannot remember all the mistakes I have made,

aspects of phrasing, dynamics or tempo. It is indeed very important to keep the same tempo and dynamics throughout, in particular in multiple “takes”, so that any potential cuts will not jar. It is not only my role but also the producer’s role to judge whether my interpretation remains consistent throughout the session. The producer has to focus on listening to both the micro-level (specific mistakes which may require retakes) and the macro-level (the coherence of the takes in relation to each other).

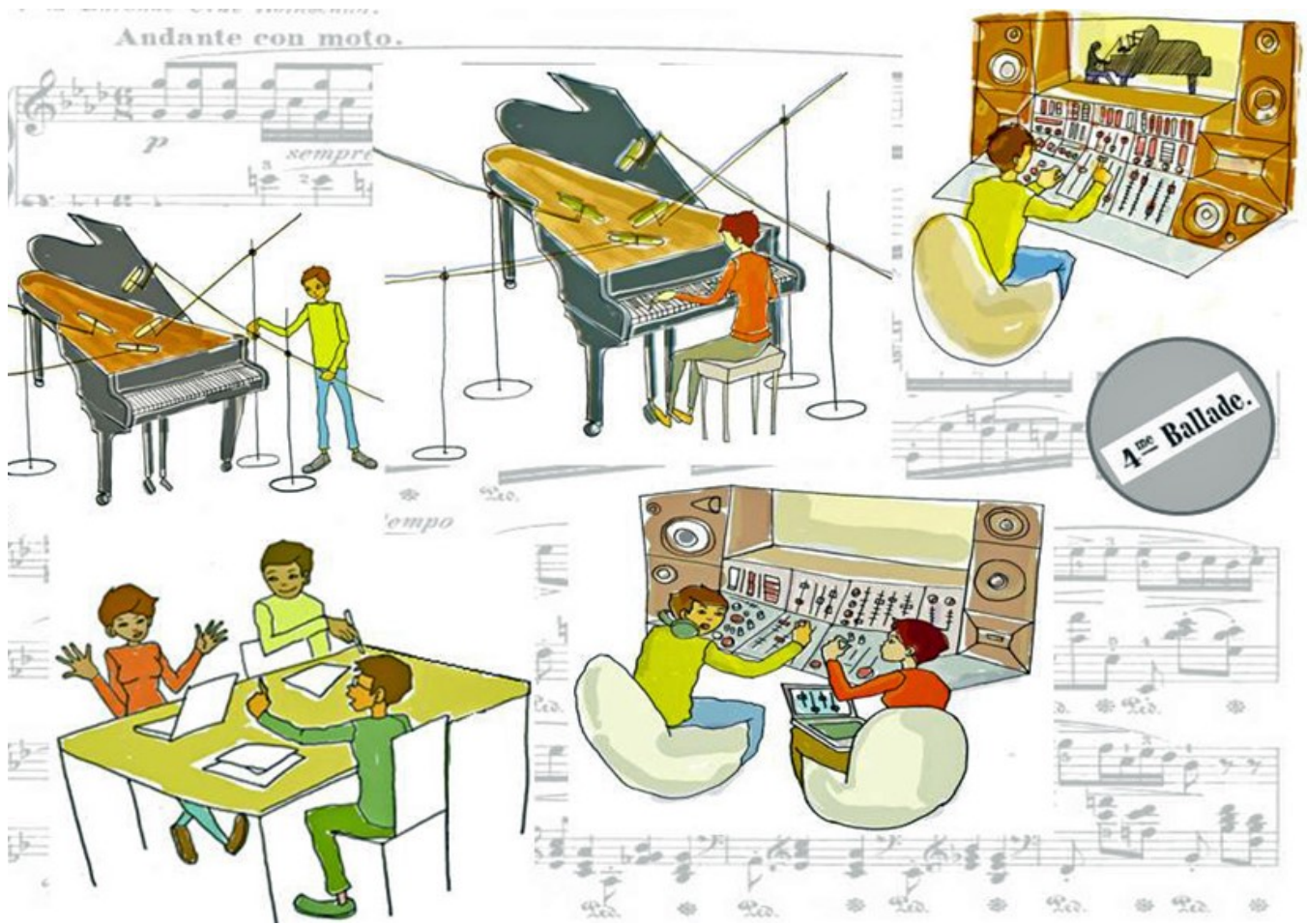
The whole recording session is extremely tiring because I have to maintain my concentration and physical energy as well as the sense of spontaneity and freshness in my playing for the whole duration of the recording session. It is also a very exciting process as we try to solve problems of dynamics (the effects on tape are often achieved differently from those of a live performance, so I have to change my interpretation accordingly), discrepancies in tempo, technical difficulties, etc. within a short time-scale. We discuss various ways of interpreting passages and most importantly, the producer and the Tonmeister also support and encourage me when I get frustrated with certain passages which I sometimes cannot get



“right” even after a dozen takes. Even in a sound-proofed recording studio, sometimes, a creaking piano stool, somebody banging a door outside or the ceiling cracking in a soft passage can spoil an otherwise perfect take, to our great dismay.

Once satisfied with all the takes, the producer, Tonmeister and myself will meet again in order to start the editing. The producer will prepare an editing plan which he works out from his notes. The idea is to have the fewest possible cuts in order to maintain continuity in the flow of the music. The tonmeister will use the producer’s editing plan to make a “first” edit. The three of us will then listen to this first edit in one of the listening rooms, marking down on the score any spots which need re-editing. Very often, the first edit is a very rough cut and the editing will take several days to complete as we listen painstakingly to each and every note. The whole recording appears on the screen as a complex network of sound waves, which enables the Tonmeister to pinpoint the very start of each note with extreme precision. Sometimes it is very difficult to paste in certain sections where no silence occurs in the music and the Tonmeister will work on blending two takes together in order to smooth over the cut.

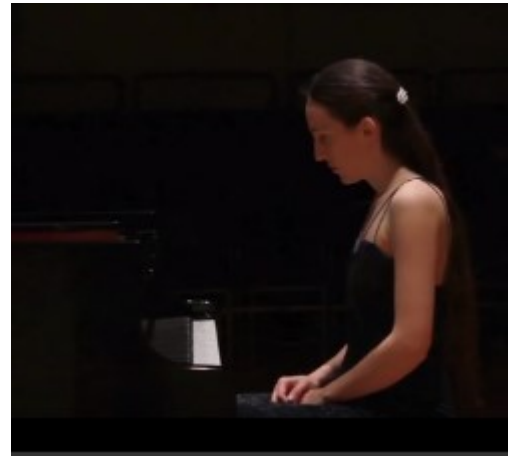
I have never had a more stimulating and rewarding time. If I were asked to briefly summarize what made this experience so valuable, I would emphasize the quality of the teamwork and the sheer excitement of having to deal constructively and creatively with the many problems and new challenges we faced at each and every stage of the project. All three of us - the Tonmeister, the producer and myself, the pianist - worked in such close collaboration throughout and with such utter dedication to the task that we were able to produce a recording of Chopin’s 4th Ballade whose quality we felt surpassed many commercial classical CDs. On the way, I also discovered many other things: the project involved not only sitting down at the piano and playing a piece of music, but also, in this case, listening to others’ directives and opinions, deciding as a team how to proceed, and working out potential difficulties. To be allowed to try out our own ideas and proceed at times by trial and error was far more effective than to be simply told what to do. This was particularly valuable as in a non-academic or professional situation, we would not expect to be told how to solve the problems which we would be facing. [Rather] it involved making judicious decisions at every step throughout the process, working hand in hand and collaborating closely together at each stage of the project and always keeping an open enquiring mind as to the best ways to proceed and obtain the best result.



An ecology of collaboration

What its like to perform?

I sit motionless at the piano, my hands lying on my lap, my head bowed in intense and quiet concentration. I am about to perform one of my favourite pieces, a Ballade by Frederic Chopin. His fourth and last. Different from the others. Pervaded by mournful gypsy tunes reminiscent of Chopin's Polish roots, this work has always had an elusive, strange and mysterious quality. I remember walking alone in the hills, preparing for this moment, playing the music in my head, over and over again, asking myself "what, why, how?", and linking tones with tones, phrases with phrases, chords with chords, trying to make sense of the music. As I searched for a meaning, a new world appeared, a world of abstract patterns and colours, relations and structures, a world which I would soon be bringing to life and communicating to my audience... A click. The black speaker in the corner of the studio suddenly comes to life, its little red light flashing urgently in the muted light, breaking the stillness. I look up towards the control room, vaguely seeing human shapes in the penumbra, separated from me by a thick tinted glass window. They wave and smile. I nod and wave back. 'All set, ready to go, take 1'. The disembodied voice of the producer breaks through the air. With another click, the sound engineer flips the microphone switch off. Again, I am alone.



A wave of silence washes over me. But it is not silent. Small sounds which would have otherwise gone unnoticed are suddenly magnified out of all proportion. The aeration vents are gently breathing in and out and the fluorescent lights are softly buzzing. The room feels alive, like some sleeping beast which will soon awaken to the sound and fury of Chopin's Ballade. I am not only to play the music. For a moment, I am to forget myself and be the music, and so doing draw my audience into the music so that they too forget themselves and become the music. But today, my audience is a forest of grey



and black microphones. These are particularly difficult ears to please. Blind, unresponsive, unforgiving, silent, cold and calculating, they will remember and record every detail of my performance, the good moments, but also, the bad. It is difficult not to become self-conscious of one's technical limitations, to focus on the bad rather than the good. It is difficult not to give up in despair when two minutes into the music, something goes wrong and the whole section needs to be played again, and again, until every note has its correct place in the flow of the music. Every flaw, however minute, needs to be rectified until the piece is "perfect".

But what is perfection in performance? In a concert situation, many variables affect one's interpretation. The piano itself, sometimes bright, sometimes muted, its action heavy or light, greatly influences the way one plays a piece. The acoustics of the room - from a reverberant church to a dry, deadened hall - will affect its sound world. The audience, quiet or noisy, sullen or enthusiastic will change the whole atmosphere of the concert hall. Tempo, voicing, balance, phrasing or dynamic progressions are thus governed by such external variables, by a constant adjusting and readjusting of the interpretation to suit the moment, thus creating a two way communication between the artist and the audience. That is why each and every live performance is never perfect as such because it is always different, but also always new and exciting, spontaneous and alive.

How different is the experience of the recording studio. Playing on one of the most beautifully toned and desirable pianos in the world, in one of the most carefully gauged acoustics in the world, without the distractions that even the most well behaved audience will provoke, my interpretation is stripped down to its most essential expression. Pencil poised above the score, the producer is waiting patiently, straining to hear the first notes of the piece, wishing me to play my best, ready to inspire me to new heights by taking on the role of an entire audience, responsive, enthusiastic and trustworthy. My lifeline.

The Tonmeister sits at the control panel, keeping an eye on the little screens, hands hovering over the buttons, ready to adjust volume and balance. He has already spent hours perfecting the sound, moving microphones here and there, until the recorded piano sounds as lifelike and natural as the piano itself. I reflect that they too are in a parallel world - a small box of a room dominated by two giant loudspeakers. Connected together by a thin network of wires, we are never so close as in those instants of silence before I play, when I can sense them holding their breaths, willing me to outdo myself. Lifting my hands to the keyboard, I close my eyes and feel the space around me receding, the walls of the studio falling away. The first three bell-like notes of the opening of the ballade seem to softly probe the surrounding air, an emerging melody as mellifluous and enticing as the call of a siren to lost sailors. Gradually, more voices are heard and the calm opening section gives way to an ever increasing crescendo of colours, textures and speed. Like fireworks, crisscrossing waves of sound build webs of lightning filaments, the chains of atoms dancing hand in hand to the sound of music. Sound is colour. Sound is texture. Sound is pattern. A revelation. I can see it, I can feel it, I can create it. Swaying slightly on the piano stool, I set my whole mind and body on building a living, ever changing architecture of sound from Chopin's masterpiece.



As the last notes of the piece die away, I feel the room heave a sigh, as if exhausted by such an onslaught of sound. The Tonmeister and producer are smiling and laughing, happy at the result. I too am elated, if slightly dazed by the intensity of the performance. Even so, for the next three hours, we painstakingly go through the piece line by line, page by page, over and over again as I try to recapture the spontaneity of the first take and improve each section so that the producer's final jigsaw of assembled takes will be as spontaneous, seamless and flowing as that first performance, so that it will be perfect not only in letter but in spirit. At the end of this experience, it seems to me that, together, we have transcended the emptiness and inhumanity of the recording studio, that I have been playing not to a blank wall of microphones but to a universal audience, the music thus reaching out far beyond the walls of the concert hall. Finally, we close the lid of the piano, disconnect the microphones and switch off the lights, locking the doors behind us.

Acknowledgement

This article was originally written for the Immersive Experience Conference organised by the Surrey Centre for Excellence in Professional Training and Education (SCEPTre) held at the University of Surrey in 2008. The article was published in the conference programme which can be downloaded from the conference wiki You can hear and watch Emilie play at: <https://www.youtube.com/watch?v=loozKs7uMgM>. To find out more about Emilie visit <https://www.emiliecapulet.com/>

Original reference

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Exploring Ecologies of Practice and Performance Ecosystems Through the Perceptions and Experiences of Two Musicians

Norman Jackson

Introduction

Music is a domain in which the ecological metaphor has long been used to characterize the complex interactions, connections, relationships and interdependencies of musicians engaged in musical performance, playing particular music, with particular instruments, in particular audio-acoustic and social/cultural settings, for particular purposes. According to Impette, 'music [can be] understood as a dynamical complex of interacting situated embodied behaviours.'¹ John Bowers proposed the idea of performance ecosystems in 2001 and the idea was developed further by Simon Waters. This extract from an article by Waters² captures the idea of a musical performance ecosystem.

I follow Impett¹ in understanding music as a complex dynamical system, whether one is talking about its organisation as acoustic fact, or about its consolidation in culture as a (social) practice embodying behaviours, beliefs and actions. And here I'm concerned to apply this model for understanding complex interactions to the distinctions between the terms: performer, instrument, and environment....What is lost in this set of distinctions? What is masked, covered, generalised away in the mute acceptance of these separations?.....^{2:2}

One victim is an important ambiguity, the fragility of the performer-instrument articulation - the specificity of an individual's 'touch' - which results not only from the physiology of the player, but the complex feedback into that player's body of vibrating materials, air, room, and the physiological adaptations and adjustments in that body and its 'software' which themselves feed back into the vibrating complex of instrument and room.^{2:2-3}

the constraints and constructs upon which music depends are not only, not even mostly, to be found in the physical object of the instrument, but in the physiology of this particular body, in the algorithms which operate in this particular piece of warm wet meat, and in the many relationships between all of these and a particular acoustic and social environment.^{2:3}

A study by Emily Payne, combining interviews and audio-visual footage of pre-performance activities of musicians, illustrates the 'dynamic character of skilled practice, shaped not solely by the knowledge of individual practitioners, but through a close reciprocity between perception, action, and the discursive and material conditions of their surroundings.'^{3:2} She makes a good case for 'skilled practice as an interplay between performers and the complex musical ecosystems, a meshwork of people, objects, histories, and processes, which they inhabit.'^{3:2}

Payne's study emphasises the craft-based nature of musical performance. Her interpretations draw on Tim Ingold's proposition that 'the craftsperson thinks through making'^{4:6} which is rooted in the performers physical and everyday encounters with the world. The craftsperson has an inherently bodily relationship with his or her materials, and a highly developed awareness of how they respond to intentions and actions. In attending to embodied practices, a craft-based model of performance points to a broadly ecological approach, situating the practitioner in the context of an active engagement with the constituents of his or her surroundings, [in which]....action and perception are ... directly coupled'^{3:6-7}^{5:119} In this way, the organism adapts to and is actively engaged in a constant learning process.

In this article I will build on and connect to Payne's ideas using the framework I am developing⁶ to characterise, in general terms, the particular ecologies of practice a musician creates within the specialised ecosystems for musical performance they are inhabiting. My attempt to simplistically model the complexity of a performance ecology draws on the narratives of Christina Kobb (CK)⁷ and Emelie Crapulet (EC)⁸: the expert musicians who provide the substantive practice-based accounts in this issue of the magazine.

Ecosystems for inventing, making, distributing, consuming & using music

All organisms inhabit an ecosystem - the complex set of relationships and interactions among the residents, resources and habitats of an area for the purpose of living⁹. Each organism within the ecosystem develops a unique ecology for living and reproducing its species. People also inhabit one or more eco-social systems but we differ from other organisms in the extent to which we make and modify our own ecosystems and develop our own ecologies not simply for the purpose of sustaining ourselves but to fulfill particular purposes and make our lives more interesting and meaningful. One such purpose is the making of music by people who are skilled at making music and the wider engagement with music of populations who use, appreciate and gain pleasure and meaning from music that has been made.

'[Our] engagement with music is one of the most universal activities of humans that does not have a direct link to our survival as a species. Nobody ever died from music depravation, yet we work and worship to music, dance and court to music, make love and relax to music, rejoice and grieve with music'¹⁰.

Ecosystems are complex adaptive systems¹¹. They are complex because they have many parts and many connections between the parts and adaptive because their feedback structure gives them the ability to change in ways that sustain the ecosystem. Biological systems have a hierarchy of organizational levels that extends from molecules and cells to individual organisms, populations and whole ecosystems. Any ecosystem is characterized by flows: flows of nutrients and energy, flows of materials, and flows of information. Such flows provide the interconnections between parts, and transform the community from a random collection of species into an integrated whole, an ecosystem in which biotic and abiotic parts are interrelated^{11:433}. In this way macroscopic system level properties emerge from interactions among components^{11:431}.

There is an enormous variety of ecosystems for the production, performance, recording, distribution and consumption of music so how might these ecosystems be represented? Huib Schippers grappled with this complexity question. After consulting colleagues in the music business, performance, education, policy, and research, he identified five domains—or clusters of forces—that seem to impact the sustainability of most music practices¹⁰. These were systems of learning music; musicians and communities; context and constructs (the values and attitudes underlying how any music practice is created, learned, and performed); infrastructure (the hardware of music, from instruments to concert halls) and regulations (including copyright laws, subsidies, and taxes); and media and the music industry.

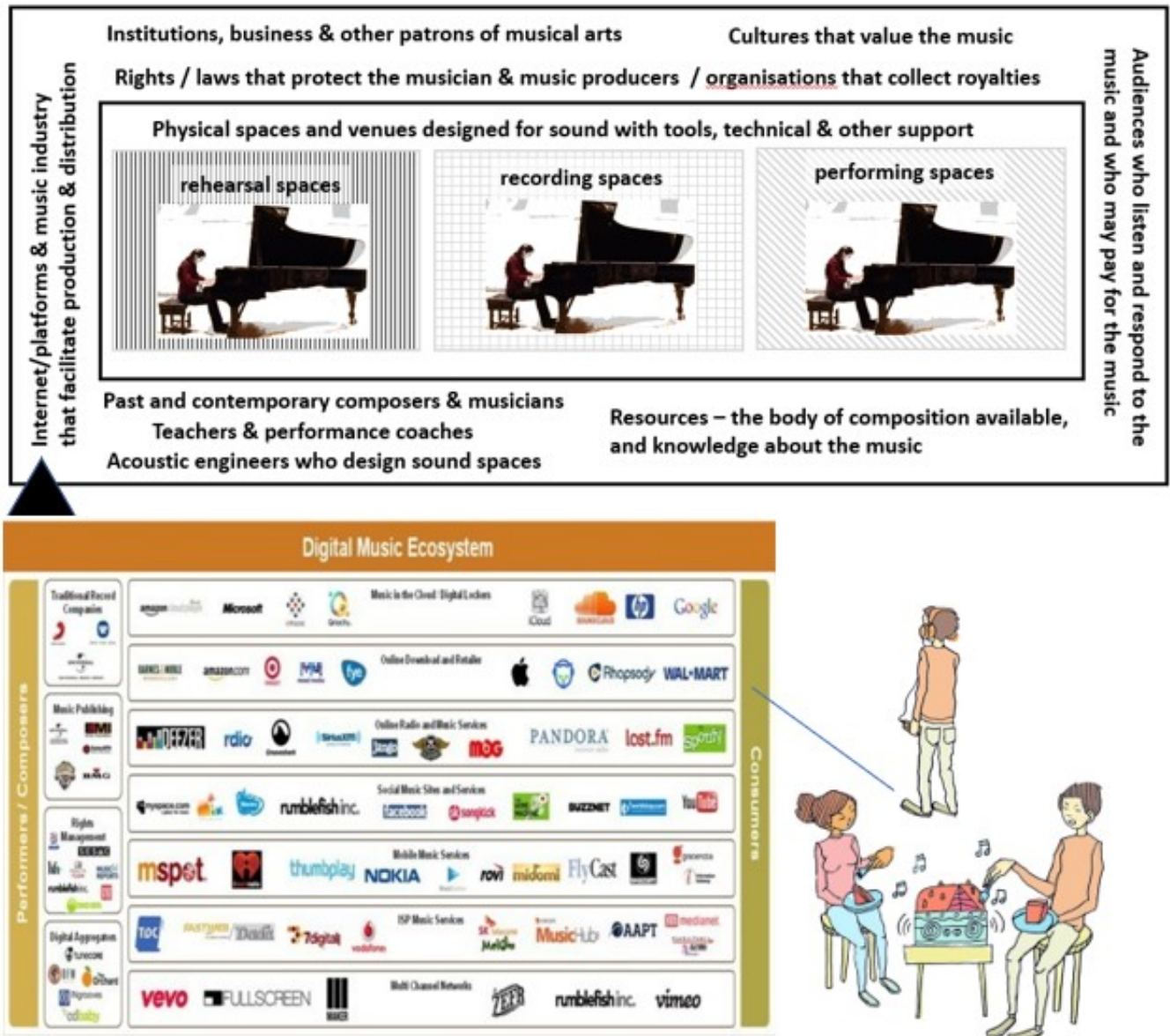
The proposition that virtually every music practice deals with each of these five domains in negotiating its place in the contemporary world of sound was tested through an international research collaboration, 'Sustainable Futures for Music Cultures (2009-2014)'. Nine international research teams carefully examined traditions ranging from Mexican mariachi to Korean samulnori; from Indian ragas to West African ewe dance-percussion; and from Aboriginal women's songs in Central Australia to Western opera¹⁰. Through this research, a picture emerged of the forces working on the sustainability of any music practice. In each domain, there were a number of prominent forces: engaged communities, well-developed systems of handing down the music, laws and infrastructure conducive to vibrant music-making, quality exposure through media and on the Internet, and a high regard for the music practice. These can be found (clockwise) in the model developed (Figure 1) to render a generic representation of "Ecosystems of Music."¹⁰

Figure 1 Generic representation of "Ecosystems of Music."¹⁰



Any musician will work within a particular set of contexts and circumstances that will contain particular elements of this matrix. The two musicians that provide the narratives for this interpretation might be working within broadly similar eco-social-cultural systems the main elements of which are represented in Figure 2.

Figure 2 Possible configuration of the eco social-technological-economic systems within which musicians like Christina Kobb and Emilie Crapulet are creating their personal ecologies of practice and performance. Potentially, the musician connects, interacts and forms relationships with all the elements in this model. In the last decade, the growth of digital platforms has revolutionised the ecosystem for music producers and consumers¹² (source of digital music ecosystem image¹²).



Personal ecologies for making music

The central thesis of this article is that musicians inhabit a social/cultural, technological and economic ecosystem, such as is outlined above, and within this ecosystem they create their own unique ecologies of practice in order to make/performance their music. The musician's goal and practical task is to turn the musical ideas of the composer, recorded in the symbolic language of the field (musical score) into the sounds that her audience can appreciate and engage with physically, emotionally and intellectually, through her own cognitive and emotional processes, and embodied skilful practices interacting with her instrument and the wider environment. The sounds that are produced are a combination of those imagined by the composer and those imagined and reproduced by the musician using a particular music making tool, like the piano, in a particular place with its unique visual and acoustic properties, on a particular occasion.

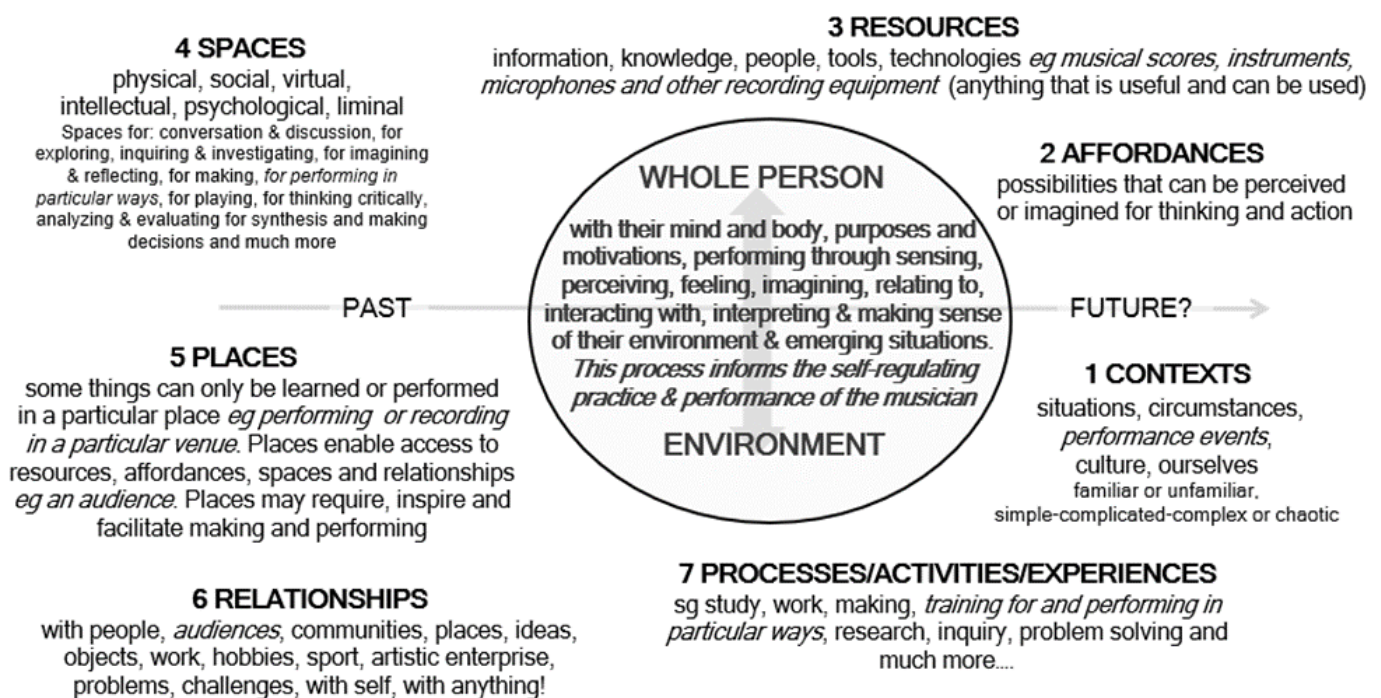
Through the narratives of two musicians^{7,8} we can begin to appreciate the complex web of motivations, connections, relationships and interactions a musician encounters and creates as they prepare and perform. The narratives also convey a sense of the way their practice unifies them as a unique person, with their specialized knowledge and embodied skill, their musical vision and goals, the tools they are using to make their music in a particular context and environment, and the music as it emerges from these beings and doings.

The use of the ecological metaphor to characterize complex practice and performance involving learning, performing and achieving, is an attempt to relate a whole living, thinking, feeling, acting (performing), person to their circumstances and contexts, their needs, desires and purposes (immediate and longer term), the situations they are dealing with and the particular places they are learning and performing in.¹¹ When someone encounters a new situation, problem, challenge or opportunity, they use their senses and their mind's interpretation of the flow of information and context to perceive and comprehend the situation and act in ways that are appropriate. Effectively, they create, inhabit and sustain an ecology that enables them to interact with their environment, which they are co-creating, and the particular things that matter to them in order to understand, act (perform) learn and achieve.

In the words of anthropologist Tim Ingold, *"Every organism has an environment: the organism shapes its environment and environment shapes the organism. So it helps to think of an indivisible totality of 'organism plus environment' - best seen as an ongoing process of growth and development"*^{13:20}.

The musician's environment is the particular set of spaces, places, resources like music, instruments, recording equipment, people, contexts, circumstances and situations with which she interacts everyday, together with the culture, activities and ways of being it promotes. She participates in this environment and through these interactions she undergoes a process of growth and development. Through her participation she contributes to and changes her environment and herself. This generative process of personal growth brought about through an individual's purposeful interaction with their environment is what Ingold^{14, 15:124} calls 'undergoing', *"every practitioner has to improvise his or her own passage through the array of tasks the performance entails..... the wellsprings of creativity lie, not inside people's heads but in their attending upon a world in formation. In this kind of creativity, undergone rather than done"*^{15:124}. For the musician, a world in formation is her unfolding present as she participates in a rehearsal, recording or performance situation. Figure 3 provides a heuristic to reveal some of the complexity involved in significant acts of learning and performing in an unfolding present - a world in formation.

Figure 3 Learning ecology heuristic to reveal some of the complexity involved in significant acts of learning and performing in an unfolding present (adapted from Jackson⁶). The labels (1-7) explain aspects of the ecology they make reference to the performance of the musician.



Example ecology of musical practice - Christina Kobb (CK)

Playing a piece of music to absolute perfection using a particular instrument, is a domain specific challenge for musicians. Seeking perfection in musical practice requires years of disciplined study at both a theoretical and practical level, to develop the necessary knowledge, technical capabilities, dexterity and interpretive aptitudes that make a particular musical performance distinctive and recognizably excellent by musician peers and knowledgeable audiences.

But top performers are rarely satisfied with their performance. They believe they can do better and this becomes a driving force for improvement.



I had long felt a discrepancy between what I thought I could do and what I actually proved myself capable of doing. I did not reconcile the way I wanted to play with how it sounded! Laziness was not the problem, nor was dedication. As a student, I would always get up early, practise before the classes started in the morning, and keep going until the late evening. I had opted for a “narrow path” of music and scholarship, and I moved between four countries to study with the right people and give myself a chance to succeed. I did not exactly know what my problem was, except I suspected that I had too much tension in my playing and a few other subtle flaws obvious only to a highly trained ear. Despite these things, I operated at a high professional level, but to be honest, I did not really like my playing because I knew it must be possible to do better.⁷

Such deep seated dissatisfaction is the driving force that leads to the creation of an entirely new ecology of practice and

sustains the ecology over time.

My motivation for changing anything at all is that I am simply not happy with the way I played the piano. I figured that to change the sound that was coming out of the piano, I would have to change the sound-creating impulses [created by interactions with the keys and pedals] going into the piano.⁷

CK's account of her practice is particularly instructive as it shows how an accomplished musician sought to change her practice developing an entirely new technique in order to perform in a way that was more authentic to the period of time in which the music she was playing was composed and played. This involved considerable research, to develop the necessary knowledge to play in an authentic way and dedicated and disciplined practice to train her mind and body to play in a manner that was prescribed through the 19th century manuscripts that she studied.

I first engaged in a cognitive exercise. Through careful research my analytical brain identified all the basic instructions on piano technique described in 200 year old German and Viennese treatises, taught them to myself and observed how the phrasing of the music changed under my fingers (I also studied period music theory, but the physical aspect is easier to explain). As soon as I had figured out my technique and my fingers started to adhere to the new movements, I got a kind of dialogue going on between my head and my hands about how to optimize the actions even further. These fine-tunings became obvious as the interaction with the musical material continued, in other words, as I tested the new technique on a greater number of examples.⁷

This aspect of CK's ecology of practice shows how her ecology for learning in her unfolding present, reached back in time to connect to the artefacts that were created in the past. These artefacts became essential resources in her present to accomplish her ambition.

But having this knowledge was not enough, she had to apply it in her practice to develop the embodied skill she needed in order to perform. To achieve the manual dexterity and fluency necessary to perform in this way she created her own 'system' for changing and developing her practice.

[I have developed] a 'system', the “set of interdependent actions” (or constituents) on the physical, mental and emotional level respectively, to change/develop my practice. I define and inspect each action, gain an understanding of its overall function, and explore its improvement potential in enhancing the practice as a whole. I construct different exercises to practise better ways of executing each action, constituent, transition or sequence. This approach gives me insight about why something - big or small - works or does not work. Hence, it allows me to improve my performance, instead of just “hoping I will get better with time”.⁷

Her narrative explains the intricacies of the actions she performs to enable her mind and body to play the instrument in the way she believes is authentic.

'it's very important that you sit straight at the chair and your shoulders should not lean forward like this. You should look at the music not the keys that's the ideal and also you should sit so high that your hand your arm will slope down towards the keyboard..... like this and maintaining the index finger as the highest point on my hand. This is done in order that the elbow should stay close to the body even when you ascend like this the this askew position of the hand is a good combination with having your elbow like this so the fingers always go first and you do not move your elbow more than necessary from your body so for instance if you move your elbow here it's very hard to maintain the correct position of the hand and that's an important point or this technique that you have to take all of the elements together also then when it comes to the movement of the fingers they are supposed to move like this moving only the outer joint of the finger like this now you had to excuse my [little finger] a little bit because he hasn't gotten this yet'



Through sustained, deliberate and purposeful practice CK changes her whole way of being as she thinks about, imagines, and plays the music. A synthesis representation of her ecology of practice is provided in Figure 4.

Figure 4 A representation of Christina Kobb's ecology of practice through which she learns to perform differently ie she 'undergoes' the change in practice she seeks.



CK's narrative highlights the importance of focused and sustained practise to achieve exceptional levels of performance. Ingold suggests that through repeated trials, and guided by his observations [the novice] gradually gets the feel of things for himself that is, he learns to fine-tune his own movements so as to achieve the rhythmic fluency of the accomplished practitioner.^{13:353}

CK's account reveals that accomplished practitioners engage in a similar process, although repeated are highly systematized and methodical requiring considerable mental and physical effort and self-critical awareness. Perhaps more accomplished musicians are better at regulating themselves than a less accomplished musician and more motivated to accomplish their performance goals.

The type deliberate and systematic practise that CK undertook is typical of performers who are striving for excellence, uniqueness and perfection in their practice.

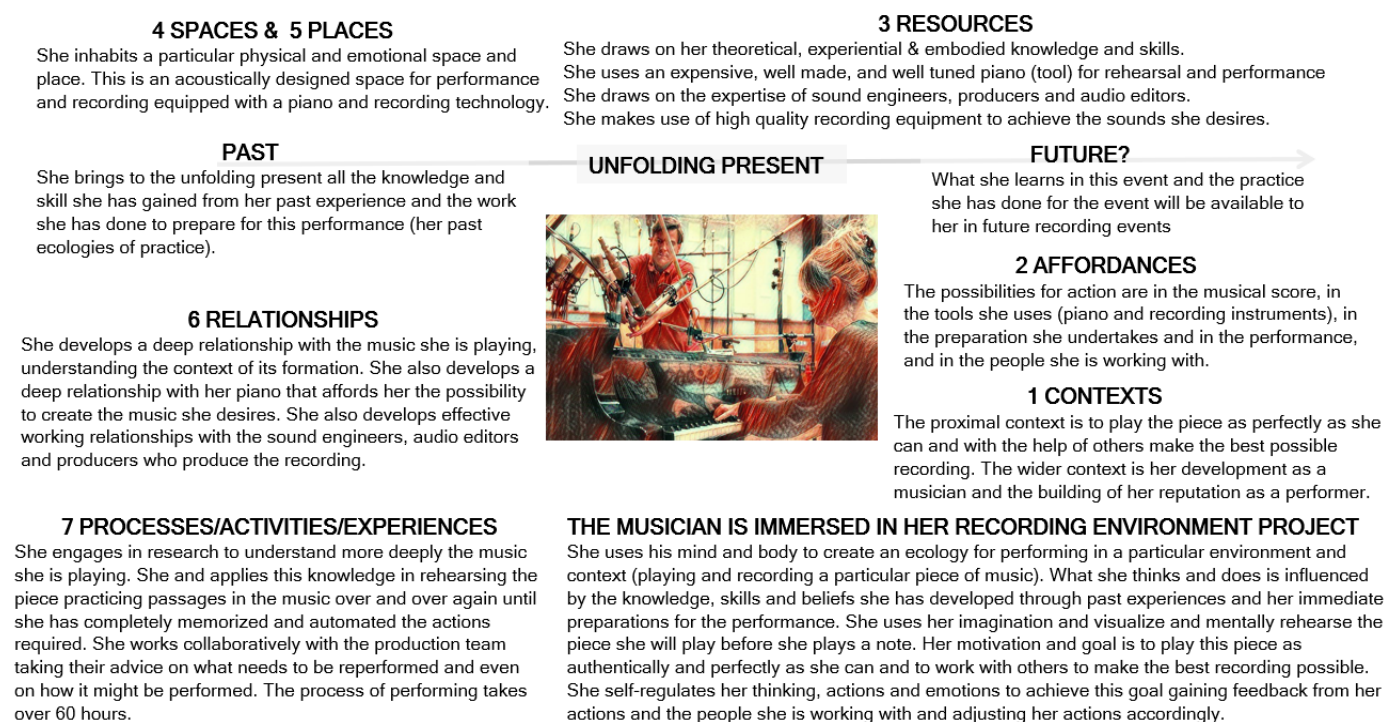
*I have found that no matter what field you study, music or sports or chess or something else, the most effective types of practise all follow the same set of general principles. There is no obvious reason why this should be the case. Why should the teaching techniques used to turn aspiring musicians into concert pianists have anything to do with the training that a dancer must go through to become a prima ballerina or the study that a chess player must undertake to become a grandmaster? The answer is that the most effective and most powerful types of practise in any field work by harnessing the adaptability of the human body and brain to create, step by step, the ability to do things that were previously not possible.*¹⁶

Example ecology of musical practice - Emilie Crapulet (EC)

Making and performing music often involves collaboration. I don't just mean that it often involves more than one musician, I mean that a number of people contribute to the ecology that creates the music and enables it to be made, performed, recorded and distributed. For example, a piece of music will have been composed by someone, the musical score will have been prepared and published, a musician will use the score to imagine and then play the music, if the music is to be recorded sound technicians and producers will be involved, if the music is to be played in a venue the people who manage the facility will be involved.

EC's narrative captures something of the intensity, energy and spirit of close collaborative working *relationships* under pressure and in an environment akin to a commercial recording studio. Figure 5 illustrates her ecology for practice an ecology that acts as a nexus for the practice ecologies of the team of collaborating sound engineers and producers.

Figure 5 A representation of Emilie Crapulet's ecology of practice



Affordance for creating a high quality musical recording lay in the experience of musical performance and real-time recording of the performance in an environment that had been constructed (acoustically) for this purpose (*space/place*) and in the tools and resources available in that environment. Affordance was also in talented team of individuals brought together for the collaboration. EC's narrative describes the organized and improvised behavior of a small group of highly skilled and committed people working together to achieve a complex goal, striving for excellence in their achievement and learning and developing together through the process of making music and making a high quality recording of the music. It reveals the complex interaction knowledgeable and skilful people working together, with their specialist tools and other resources in a highly specialised environment (*relationships between people, tools and environment*) which provided the physical *context* for their collaborative learning ecology.

Complex performances and achievements, such as the one EC describes cannot be accomplished by a single individual and the involvement of a group of people working as a team is core to the success of the project. The process is not the work of one person but is co-created by all who are involved. Each participant contributes their talents and capabilities gained from past experiences, and together they create a productive, inquiry-rich, problem solving *process*, which not only tests their own capability but also provides an experience that is rich in opportunity and potential for their own learning and professional development.

As practitioners work together [on a project to which they are all committed], their interactions are en-meshed, both with the concrete material tools of their environment and with the implicit but no less significant aspects of their craft(s), the embodied and tacit processes of performance.^{3:22}

All participants in this process shared the same *proximal goal* - to create a recording of the highest technical and artistic quality and this was set within more *distal goals* concerned with gaining the best marks for this aspect of their course and building a portfolio that would enable the student participants to gain employment in their chosen professional fields, and of becoming a better version of themselves in whatever role they were performing. This team of students were behaving as a collective¹⁷ in which, over the space of a few days, their individual learning ecologies were merged to form a single collaborative ecology for the purpose of achieving the goal they shared.

Performance is one of the most difficult things to capture in a reflective narrative but EC manages to convey a sense of her thoughts, feelings, actions and responses to the music she is making very well. Such heightened self-awareness is a necessary part of the ecology of a performer and it helps her convey something of what it is actually like to be an accomplished musician working at the edge of her capability. A space where musical notes on a paper are given a life of sound and when woven together in a particular way form a tune. A space where the musician transforms herself as she undergoes the change that is brought about by her interactions with her material and psychological world.

Lifting my hands to the keyboard, I close my eyes and feel the space around me receding, the walls of the studio falling away. The first three bell-like notes of the opening of the balladeem to softly probe the surrounding air, an emerging melody as mellifluous and enticing as the call of a siren to lost sailors. Gradually, more voices are heard, and the calm opening section gives way to an ever increasing crescendo of colours, textures and speed. Like fireworks, crisscrossing waves of sound build webs of lightning filaments, the chains of atoms dancing hand in hand to the sound of music. Sound is colour. Sound is texture. Sound is pattern. A revelation. I can see it, I can feel it, I can create it. Swaying slightly on the piano stool, I set my whole mind and body on building a living, ever changing architecture of sound from Chopin's masterpiece. Emily Crapulet



This is what being creative felt like to her when she performed in her unfolding present.

The creative act of making music

Tim Ingold has much to say about the ecology of making of cultural artefacts (like music) that grow through a unique person interacting in a purposeful goal directed way with the materials in their environment.

'what people do with materials [eg a musical score and a piano] is to follow them, weaving their own lines of becoming into the texture of material flows comprising the lifeworld. Out of this, there emerge the kinds of things we call buildings, plants, pies and paintings'^{18:92}, and in our narratives music.

But these lines of becoming are likely to have been imagined by the musician before a note is played.

'When I read a score, I "hear" the music in my head and work out how I want it to sound when I play. Usually, I imagine a sound, a chord, a phrase in my head before practicing the execution of what I just imagined. In my imagination (in my "inner ear"), I establish a blueprint to hold onto when I practice and perform. Hence, my imagination informs my fingers. But the opposite is also true: hearing my fingers produce the same sounds on the piano over and over again conditions my imagination.' Christina Kobb

Both the concert pianist and the pianist who is recording a piece of music are seeking excellence in their performance. Performance is both a process - the making of the sounds, and a product - when the sounds have been produced they can be experienced. The making of the collection of sounds that we recognize as music, involves the musician in reading and interpreting the notes and instructions contained in the score, and using their embodied skill and emotional responses, touch the appropriate keys on the piano in particular ways and in particular sequences and time.

While the performance can be recognized as an act of technical and creative expression, the making of the performance is through a process that involves the complex sensory and emotional interaction of the musician with their material and psychological world, 'the tactile improvisations by which living organisms co-opt whatever possibilities their environments may afford to make their ways in the tangle of the world.'^{20:5}

It is not surprising that creativity is a difficult concept to understand for it is a distributed phenomenon emerging through a process that involves a whole thinking and feeling person with uniquely developed embodied skill, interacting with their particular material world in a purposeful, meaningful and self-aware way - a way that they have prepared for in a general way over many years, and in a particular way over a shorter timescale. It is through this process involving a unique person in unique circumstances, conducted over multiple time frames that the unique musician discovers how to bring the marks on a piece of paper into existence in the concert hall or recording studio, in a particular way. It is their act of creation.



Such a view of creativity is succinctly captured in Carl Rogers definition of a creative process, '*the creative process is the emergence in action of a novel relational product growing out of the uniqueness of the individual on the one hand, and the materials, events, or circumstances of their life*'¹²¹.

For a musician, the music she creates - the product of her technical skill and creativity, emerges from her performance - her process of making in a material and psychological world that has been assembled, selected and perhaps designed for the purpose of this making. The music might be a transient phenomenon that is listened and reacted to in the moment by those who witness its emergence through the musician's playing. Alternatively, the music that is created might be recorded, archived and distributed so that others, who were not present in that unique moment, might listen to and appreciate it in the future. In this way a musician's ecology embeds their performance in a moment of time in the wider ecosystem which they help to sustain, and to the ecologies of many people they will never know.

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If you would like to contribute an article about your own practices in any aspect of your life be they work, hobbies and interests, or any other activity, please contact the commissioning editor :
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What do you want to share?


Ellie Hannan • General stuff, announcements

6d

Hello everyone! For those of you with an interest in digital learning and teaching, myself and +Chrissi Nerantzi are hosting a Wildcard event this afternoon (1:30-3PM UK time) called the #101creativeideas challenge.

It is part of the ALT Winter Conference and the idea is to create and share ideas for creative digital practice in learning and teaching!

You don't need to register, just go to <https://alt.ac.uk/online2016/sessions/101creativeideas-challenge-71>



+1 1

Chrissi Nerantzi • Thank you Ellie. Join us if you are around. Thank you for all your wonderfully creative ideas so far.

Chrissi Nerantzi Owner • General stuff, announcements


3w

Hello everybody,

Nassi (15) has created an advent calendar for some daily inspiration. Please access <http://www.celt.mmu.ac.uk/advent/index.html> to unlock your daily star.

Feel free to share with others. Thank you.

Chrissi from the #greenhouse



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+1 5


francisco j. santos: Nice and inspiring. Thank you Chrissi.

Sandra Sinfield Moderator • General stuff, announcements

2w

#lovelid - loving this invitation! Thanks #cdmooct

Originally shared by Kevin Hodgson



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What do you want to share?

Norman Jackson Owner • General Information

9w

NOVEMBER ISSUE OF CREATIVE ACADEMIC MAGAZINE #7 HAS BEEN PUBLISHED

It contains a number of articles drawn from the recent #creativeHE conversation including a synthesis of the Little Boy Story.

We are intending to publish several more articles in the December update and welcome further contributions on the theme of Creative Pedagogies for Creative Learning Ecologies. Special thanks to contributors +Jennifer Willis +Simor

