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## Expect the Unexpected: Experimental Music, or the Ignorance of Sound Design

During a winter evening at the end of 1990s, a friend took me to a records shop downtown Geneva, Switzerland. It was located in a small apartment on the first floor of an old building. The shop consisted of one room, furnished with shelves, a coffee table, a sofa, and couple of chairs next to a fireplace. Records, mostly compact discs, were arranged on the shelves, listed according to their novelty. A box provided a selection of older records, arranged alphabetically by composers and musicians names. It was open only on Thursday and Sunday evenings, from 9 p.m. until late.

I started to visit the shop often. I would buy records, bring friends, and attend concerts that it hosted, where one or two musicians sat on the chairs and a crowd of three to ten people listened to them. Most of time, the owner of the shop was standing behind a desk next to the shelves, where he sold records, answered questions, and offered wine or beers, for free. One day, I remember asking him about the kind of music he was specialized in –*experimental music*, as people were calling it. I asked what sort of records he was selling. "Music you cannot find elsewhere", he answered.

Experimental music is a style of music that defines itself by opposition to other music styles. Many music lovers define their musical experience in opposition to other music styles[1], but experimental music bases its own characteristics not on rythmic or melodic patterns, or specific instruments, but on the very idea of *difference*. Experimental music is music that differs. And quite often, together with this idea of difference, comes the idea of *surprise*. The audience expects that the songs or the performances will contain something unexpected[2].

In this chapter, I will discuss briefly two sets of observations of the practices of experimental musicians. The first set is based on *participant comprehension*[3] (Collins, 1984) and relies on my experience as a participant in a local music community in Switzerland between 1996 and 2013. I will use elements of my *contributory expertise*[4] (Collins and Evans, 2002), together with informal interviews of people involved in these activities in Geneva, as a research field for the practice of sound art which I discuss in detail below. The second set of data consists of observations of the activities a Chinese musician which I collected using participant observation, and in-depth qualitative field work, between 2003 and 2004 in Beijing.

I will attempt to illustrate how experimental music, practiced in a developing country, is a fascinating object of study for scholars interested in the various guises of ignorance as an

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1. See the first two chapters in Thornton, 1996 for a discussion on distinction and authenticity in music subcultures.
2. "Experimental music", in this paper, refers to a generic word for a group of music practices. Besides the general argument of difference I discuss here, it also includes subcategories such as *noise music* (which relies on the evolution in time of sound materials which contents usually do not include rhythms or melodies but variations of sound density, timbre, and volume), or jazz improvisations with acoustic instruments such as guitars or brass, with melodies and rhythms, contemporary classical music, musique concrète, and other music genres.
3. "Participant comprehension" is a term coined by the sociologist of science Harry Collins (see Collins, 1984). Collins uses it to describe an interpretative research approach (which he derives from participant observation in anthropology) where a researcher gets the closest possible to a full participant of the situation s/he observes, becoming conversant with the details of the discipline s/he is observing. Specifically, in participant comprehension, claims of objectivity are considered less valuable than a deep and personal understanding what the participants are actually doing; "The stress is not on recording events (...) but on internalising a way of life." (Collins, 1984, p. 61).
4. "Contributory expertise" is used by Harry Collins and Robert Evans to describe the kind of expertise fully socialised members of a community have, including the ability to carry out the practical tasks associated with it (Collins and Evans, 2002). Collins uses the term in connexion with the one of "interactional expertise", which describes the ability to talk about the practical tasks without being able to contribute to it. For instance, a music journalist may have enough expertise in music to have a discussion with professional musicians, while at the same time not being able to play on a stage with them (hence, he would have "interactional expertise" in music). A full member of the same musicians community will be able to have the discussion *and* to play on stage ("contributory expertise").

asset (see Gross, 2010; McGoey 2012 for an overview). Exploratory methodologies used by experimental musicians are techniques of dealing with the (re)production of nonknowledge, where ignorance, failures and misuses play a central role as both expected and unexpected elements in the production of surprises.

**Lao Li**

In 2003, the experimental music scene in Beijing was intriguingly similar to the one in Geneva. There was one experimental music shop in the city, selling the same kind of music than the one I described above, and, with the important difference that the population size ratio between Geneva and Beijing was from 1 to 60, the audience at experimental music concerts looked quite similar, with a mix of Chinese and Western attendees.

I met Lao Li[5] for the first time an evening of November, at a concert where he gave a live performance together with other local and international artists in some sort of small-scale electronic music festival. In a similar way to how experimental music concerts were organized in Geneva, the audience was small (a few dozen people), and people were listening while seated. .

Lao Li's performance was beautiful. It surprised me in two aspects. First, he played with a multi-track recorder. He used the device as a live music instrument where normally this kind of device is used for recording and mixing sounds. I was used to see musicians play instruments in unusual ways –for instance, a drummer could produce rhythms by playing with bottles, tables and plates, instead of using percussions–, but I could not figure out how a multi-track recorder could be turned into an instrument; it was a playback machine, the interface did not allow one to play with it in real-time[6].

My second surprise was that Lao Li managed to produce changes in the sound which I had been unable to understand technically. I was rather proud of my technical skills (I had read Curtis Roads' one-thousand-pages *Computer Music Tutorial* published by MIT press twice, and I congratulated myself for being able to differentiate software instruments by listening and recognizing their sound characteristics), the feeling of incomprehension was a little humiliating.

During the months that followed, I managed to meet with Lao Li several times and he agreed to let me know more about his work. We had a deal: I worked as a sound engineer for him and, in exchange, he answered questions about his practice. Without going too much into the details of the field research (see Zimmermann, 2006 for more), I summarize here some of the observations I made of his working methods, and my understandings of it.

Lao Li was, I think, completely ignorant of the physics of sound as taught in colleges or universities in the West. This situation related to his personal background – he didn't go to college– and also to his lack of command of English. This was a time a time when documents that conveyed sound engineering knowledge in Mandarin were scarce (the situation has

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5. Fictitious name.

6. DJs and musicians mixing reggae tracks are used to "play" with a mixer. But, based on my experience, this is usually not considered comparable to someone playing a music instrument live. DJs use the mix to add a personal touch on the records they play (in particular when moving from the previous record to the next one), and reggae tracks are mixed live in the studio in order to add a personal feeling to the way the equalisation and other effects are applied.

changed since then, many books that discuss sound techniques have been published recently in Chinese). As a result, Lao Li had developed his own theoretical and methodological frameworks, which allowed him both to think about his music and to perform musical operations.

He made use of a specific vocabulary that allowed him to describe the changes in the sound while he was designing it. For instance, he relied on visual metaphors, such as colors (e.g. he would say: “My music is white”), or spatial movements involving flows (one day, he proposed the idea of designing a sound that would come out of the roof, penetrate the auditor through the shoulder, and then ramp on the floor). These descriptions were difficult for me to comprehend, because I had been trained in western music conservatories which made use of a different vocabulary and metaphors for most of the situations Lao Li described (familiar concepts for me were terms such as “equalisation”, “low and high frequencies”, “compression”, “panoramic”, and so forth). Interestingly, while some aspects of Lao Li’s frameworks connected with what I had been taught and what I had read in books, some of it did not correspond to anything I knew.

For instance, I was used to the notion of “spatialisation” as a word used to refer to movements of sounds in a tridimentional space. Musicians in conservatories in Switzerland considered it conventional to speak of the sound as coming out of the loudspeakers while the perception of the listener would attribute its position in space to another location. In the situation of a listener standing at equal distance of two loudspeakers outputting the same sound at the same time and the same level, the auditor would locate the source at the middle of the space between the loudspeakers; if the sound outputted a little later from the first loudspeaker compared to the second one, or with a little less intensity, it would make listeners perceive that its source was located closer to the second loudspeaker. From this point of view, to argue as Lao Li did that the sound would really “come out” of its perceived location such as the roof or the floor (and not from the loudspeakers), was wrong.

The colours Lao Li attributed to sounds often connected with the notion of “equalisation”, which sound engineers use to refer to high, medium and low frequencies contents. However, I never really managed to understand what exactly he meant when using them in a conversation (sometimes I suspected he didn’t know either). Other descriptive words he was using often, such as “piling up” 叠, “attract” 吸 and “press” 压 sound files, did not really fit either into categories I knew.

One of the key elements of his framework was the procedure he called the “piling up” of sounds. It consisted of adding sound files one on top of the other, while at the same time applying modifications to each one, so that one instance would influence the behavior of the others. For example, Lao Li copied several times a same sound, then removed part of it on one copy, turned up the volume on one section of another copy, and then added the two files together so that the differences in editing on the various copies the same recording would, according to him, “attract” part of the sound of one file into the other one, or “press” another part of the sound content by adding it to itself.

I believe Lao Li had found himself in a similar situation as early sound engineers who, having learned from experience what works best to produce a particular result, select specific devices based on the kind of sound they want (Schmidt Horning, 2004, 710). His discourse about his music was similar to the one of early sound scientists who struggled to make sense

of what they heard and how to speak about it (as described in Sterne, 2003). This aspect is reinforced by the fact that the existing vocabulary for sounds is poor when compared to visuals (in English but also in Chinese).

As discussed by Jonathan Sterne:

> While visual experience has a well-developed metalanguage, sonic experience does not. We have abstract words to describe color, texture, shape, direction, shading, and so forth. Conversely, most of the languages used to describe elements of auditory phenomena is metaphoric: aside from specialized languages in musicology, sound engineering, acoustics, and general descriptors such as loud or quiet, there are very few abstract words in common English for describing the timbre, rhythm, texture, density, amplitude, or spatiality of sounds" (Sterne, 2003: 94.) (On the history of the development of vocabulary to describe sounds, see also pp. 131-2.)

**Bad surprises...**

Although Lao Li's framework was ingenious, it did not always work well. In a situation comparable to scientists working in ecological restoration –trying out things while the knowledge available is miniscule, and based on learning by doing as well as "reciprocal tuning" between people and the natural world (Gross, 2010, 109-110)–, he complained that parts of his music often disappeared. He would design some music, and later notice, to his surprise, that "this sound has disappeared!" 声音没了！ For instance, once he had managed to design a song that permanently damaged the loudspeakers on which it was played –an effect he found very interesting. Unfortunately (or fortunately, for the owner of the loudspeakers), when he recorded the song on a compact disc and played it at a friend's place, the music did not sound the way he had expected and the loudspeakers did not break.

Another type of problem occurred during tentative attempts we did under his direction which ended up with failures. For instance, one day he wanted to use software on my computer that had functions similar to his multi-track recorder. Following his procedure of "piling up" flows of sound, we duplicated a one-hour recording of a song he had written and performed modifications on each copy. We removed high frequencies on one file, and bass frequencies on the second file. Then Lao Li designed variations of volumes on each copy, which we later merged together.

The result was of poor sound quality, and it ended up with another surprise. While we were working, we listened by mistake to the original recording, and we quickly became enthusiastic about the sound quality. Lao Li insisted that we kept that version of the song. A few minutes later, we realized that it was not the file we had just processed, but the original, unprocessed recording! The processed version, featuring the new sound edits, sounded less good than the original where some parts of the sound appeared much less clearly.

The difficulties mentioned by Lao Li about the disappearing sounds, seen from a Western sound engineering informed point of view, were related to the devices he used for listening. In most cases, he was either relying on cheap headphones or standard hi-fi loudspeakers installed at his home. Loudspeakers used when composing electronic music are crucial because they shape the sound: they are part of the "instrument". For instance, if there are too many high frequencies coming out of the loudspeakers, the listener may want to turn them down and will adjust the sound. Then, the corresponding recording will have less high frequencies.

Sound engineers emphasize the use of high quality loudspeakers and headphones in order to listen to have a "neutral" sound (i.e. close to the average of public hi-fi speakers). This way, loudspeakers allow listeners to make sound adjustments that will later sound more or less the same on most hi-fi systems. I did several attempts to transmit this knowledge to Lao Li but to my surprise, while confronted with these difficulties, Lao Li did not use it as a basis for action but rather considered it as *negative knowledge* (i.e. not known but considered unimportant, Gross 2010). He simply threw away the sounds he didn't like anymore, and started anew.

The second example with the recording that didn't sound as good as the original one, relates to the way equalisation and mixing are processed when applied to a digital recording. While two copies of the same sound file may be added one onto the other without any missmatch, the calculation applied to modify the frequency contents, done separately on the two copies, creates "blurring" effects. In order to achieve a similar goal, people trained to use these hardware and software devices usually process a file twice, instead of using two copies.

**Good surprises...**

Intriguingly, from another point of view, Lao Li's framework worked very well. It resulted in highly original and musical results which, in the best of what experimental music has to offer, were highly surprising.

I mentioned earlier that the first time I saw him in a live performance, he used a multi-track recorder as a music instrument. This kind of audio device is intended by to be used as a recorder and a mixer but not for a live performance. It didn't seem to me there would be a way to use it to play on stage. At best, for playing an already-finished piece, but not as a music instrument. What was even more surprising during the performance was that I could distinctly hear modifications of the sound Lao Li was doing but I had no idea what they were.

Lao Li was actually "piling up" 叠, "attracting" 吸 and "pressing" 压 sound files. His performance consisted of coming with a series of identical sound recordings, which he mixed on stage, playing them simultaneously and applying various kind of variations on each copy of the sound.

By means of observing Lao Li's work, discussing it with him, and reading books in parallel, I eventually discovered that Lao Li's "piling-up" technique was listed as a marvel effect in the specific case of sound compression. Here is the excerpt of the book of Bob Katz, *Mastering Audio: The Art and the Science*, where the author describes this unusual procedure:

> Let me introduce you to a venerable compression technique which has finally come to age. Imagine compression that requires just a single knob –no need to adjust attack, threshold, release or ratio. The sound quality is so transparent that careful listening is required to even know the circuit is in operation! (…) The principle is quite simple: Take a source, and mix the output of a compressor with it. (…) (Katz, 2002, 133)

In other words, by developing his own set of concepts to work with audio materials and playing with his multi-track recorder (which included an audio effects card), Lao Li had understood something identical to what Bob Katz, an American sound engineer with a

massive amount of technical knowledge on sound processing, identified as a very valid procedure. The unknown changes heard during his live performance were what Bob Katz discussed as a sound quality “so transparent that careful listening is required to even know the circuit is in operation”, what Lao Li referred to as "pressing"压 sound files and which he used as a technique of sound composition. At the same time, the procedure that Lao Li had insisted on performing on my computer had ended up in a failure. In other words, while his framework could produce very interesting results in the case of a compression effect, it could not when it came to equalisation.

**First and second degree ignorance**

One evening at the beginning of the 2000s in an experimental music club in Geneva[7], I was struck by the performance of a group of saxophonists[8]. The musicians didn’t blow in their instruments, they were using the keys of the saxophones as percussive instruments, producing rhythmic structures, amplifying the sounds using microphones and amplifiers. I had never imagined one could make a full concert that way! And, as with Lao Li, the music sounded beautiful. A few years later, I was at a concert of the famous Japanese experimental music performer Otomo Yoshihide where he threw objects in a cymbal placed on a turn-table connected to an amplifier, and did this gesture each time at the *exact moment* where I would never had expected it – he was playing intentionally at the opposite of a familiar musical movement.

In these two performances, as well as in Lao Li’s work procedure described above, we see that the way experimental musicians deal with surprises is different than the way, say, nuclear physicists or medical researchers do. Whereas in science, surprising events are sometimes welcomed as they offer a window to new and unexpected knowledge (Gross, 2010), one hardly imagine nuclear physicists or medical researchers make systematic rough “ignorant” choices when using their equipment in the hope of producing totally unexpected results. Such a research procedure would imply potentially dangerous consequences, such as risks in regard of human safety or of damaging expensive equipment. But for experimental musicians, surprises are not dangerous as they are, most of the time, limited to the domain of sound.

Some experimental musicians, such as Lao Li, work on the production of surprises mostly at their home. When it comes the moment of recording their work or presenting it on stage, surprises remain surprises only for the audience; at this point, the artist is already familiar with it. For other artists, surprises and accidents are produced directly on stage. Some artists rely on specific technical configurations (for example, a feedback chain loosely arranged, with analog gears all over the stage), that enable them to provoke unexpected results during their performance, to which they have to respond live. In that case, the concert becomes a live reaction to surprises, where (sound) surprises are the music *instrument* of their performance.[9]

Musicians who practice experimental music often complain of a concert they dislike by arguing that an artist is acting in a way they see as too conventional. For instance, one

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8. The place was run by the owner of the records shop described in the introduction, who plays an important role in regard to the local music scene in Geneva. Unfortunately, I haven’t been able to trace back the name of this band.

9. During an interview with me, the owner of the records shop, mentioned in the previous note, described the deliberate creation of surprises which artists themselves can’t foresee.

evening in November 2013, I heard during a performance two local musicians standing next to the bar, located at the other side of the concert hall of the experimental music club (the furthest away from the stage), commenting: "*No bollocks* [in English while speaking in French, with a slightly mock tone[10]]. Not only these guys are doing the same as everyone else, they don't even manage to do it well."[11] This aspect could also be observed in the e-mail announcements of the manager of the club, where the unexpected ways the artists were expected to play was emphasized regularly: "unpredictable"; "bold and radical / sharp"; "in complete synchronisation with the newest stuff and the self-questioning of the international experimental / improvised scene, therefore renewing itself constantly"; "disconcerting twists, grainy and rough synthetic modulations"[12], and so forth. In the words of one of the two musicians above whom I asked about the role of surprises or unexpected elements in experimental music performances: "It's like going on a ghost train. You don't know what will make you feel afraid, but you expect something that will make you feel this way."

Since a prerequisite to the surprise of others is first to surprise oneself, in order to produce unexpected performances for their audience, experimental musicians often travel beyond the limits of their knowledge of sound. One well-known technique is the (re)production of failures. In a similar way to Lao Li, pushing his devices into the unknown by misusing them (for instance, ending up by breaking the membranes of the loudspeakers), sound artists constantly attempt to push the technical objects they use as instruments beyond the limits of their normal/expected use, in the hope of finding a useful surprise. Once this task is achieved, part of their future performance or recording will consist of reproducing this surprise for the audience.

Of course, experimental music is not the only art practice which make use of surprises and innovation as a core element. Art in general provides with a vast domain of practices which offer similar practices, and classical music, rock music, jazz or even techno, are to experimental music what Renaissance paintings are to the latest exhibition in a museum of contemporary art. My argument here, illustrated mainly by Lao Li's practice, is that observations of experimental music in developing countries are interesting in that they provide a double point of view on the use of ignorance.

First, China, and developing countries in general, can be used as laboratories for live observations of outdated knowledge, as they provide a unique point of view on the interaction between ignorance and production of new knowledge. Such field research enables someone such as myself, with a technical training in a specific field, to observe colleagues working in conditions that are reminiscent of other nations' earlier technological refinements, with the advantage of knowing somehow in advance where the technical experiments may, or may not, end up after a long period of trial and testing. As I was observing Lao Li's practice, it enabled me not only to work for him as a technical assistant but also to compare his framework with the ones I had learned years ago in music conservatories in the West.

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10. The use of English words in French in this kind of context often goes with a humorous tone. My understanding is that French speakers rely on the tone to indicate that they don't mean to impress with their knowledge of a foreign language, but to create an effect, in most cases derogatory.

11. "*No bollocks*. Non seulement ils font la même chose que tout le monde, mais ils le font mal."

12. "imprévisible"; "audacieux et radical/pointu"; "en phase complète avec l'actualité et questionnement de l'internationale expérimentale/ improvisé, se renouvelant du coup lui-même sans cesse"; " torsions/modulations synthétiques granuleuses et agitées à souhait réellement déconcertantes [sic]".

Second, countries such as China offer a highly different cultural, social, and economical environment which gives a rich perspective on alternative possibilities for technical development. In Lao Li's story, we saw that "bad knowledge" (such as the framework of "piling up of flows") can lead to useful surprises for the artist (loudspeakers breaking down), to useful knowledge (parallel compression), as well as to non-useful surprises (sounds disappearing). In the second case, *nescience* for Lao Li, turned into ignorance, that I saw as *nonknowledge* but which Lao Li treated as *negative knowledge* in the sense defined by Gross (Gross, 2010, 68). While Lao Li worked on the (re)production of surprises in his music, ignorance was taking him in divergent directions. .

What Lao Li teaches us about ignorance is the necessity for a musician like him to handle nonknowledge in a two-step procedure. At first, conscious misuses of the tools, or hazardous attempts, are helpful to offer access to the production of surprises and to new knowledge. However, in a second step, the very same ignorance becomes an obstacle for the reproduction of these surprises: to be reproduced, the ins and outs of the process that ended up in the creation of new sounds need to be figured out in detail, and mastered. For an experimental musician, ignorance is crucial during the exploratory phase, but it may become harmful during the reproduction phases, such as the production of a recording, or a live performance.

In regard to ignorance studies, experimental music practice can be regarded as a professional attitude toward ignorance, with specific sets of exploratory methodologies where surprises play the role of the ultimate goal. As both a laboratory for the live observation of outdated knowledge, and a realm for the production of unexpectedsurprises –experimental music among others– China provides a unique vantage point for glimpsing the interaction between ignorance and production of new knowledge. It offers a unusual point of view on know-how developed to create surprises, where bad knowledge, sometimes, becomes good design.

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