

Electronic Sound as a Gender-Neutral Means of Representation

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The purpose of this paper is an attempt at describing electronic sound as a fixed entity with mutable and variable features. The point of view is theoretical, concerns the field of music theory related to sociology and psychology, and intends to find a special relationship to gender studies.

The idea beyond this paper is to show how electronic sound fits a gender-neutral representation of human life.

This study requires two considerations:

1. A social consideration: The representation of human-related themes includes gender studies as a new awareness on how the ideas of masculinity and femininity are cultural constructions rather than biological data.
2. A technical consideration: Electronic sound intended as an artificially generated sound and, unlike the sounds produced by traditional musical instruments, presents a special characteristic: it is able to constantly vary through time, while retaining its fundamental features.

Since Simone de Beauvoir and her statement "One is not born a woman, one becomes one", gender studies have represented an essential field of research and debate. [1]

In our society, constantly improving medical knowledge has shown that many people at birth are biologically neither female nor male, that is they do not fit any of the traditional dualistic categories that were considered true in the past. [2][3]

This fundamental awareness requires a new way of considering both the biological and the social identity of a person in terms of what is to be left to biology, to culture, and to choice.

According to scholars from the Department of Molecular and Cell Biology and Biochemistry, Brown University, Providence, Rhode Island, "The belief that Homo sapiens is absolutely dimorphic with the respect to sex chromosome composition, gonadal structure, hormone levels, and the structure of the internal genital duct systems and external genitalia, derives from the platonic ideal that for each sex there is a single, universally correct developmental pathway and outcome". Their extensive study "surveyed the medical literature from 1955 to the present for studies of the

frequency of deviation from the ideal male or female”. The conclusion is that “this frequency may be as high as 2% of live births”. [4]

The result is summarised in Figure 1, drawn from the quoted publication.

TABLE 8. Frequencies of various causes of nondimorphic sexual development

Cause	Estimated frequency/100 live births
Non-XX or non-XY (except Turner or Klinefelter)	0.0639
Turner	0.0369
Klinefelter	0.0922
Subtotal for chromosomal difference	0.193
Androgen Insensitivity syndrome	0.00760
Partial Androgen Insensitivity syndrome	0.000760
Classic CAH (omitting very high frequency population)	0.00770
Late-onset CAH	1.5
Subtotal of known hormonal causes	1.516
Vaginal agenesis	0.0169
True hermaphrodites	0.0012
Idiopathic	0.0009
Total	1.728

Fig. 1. Result.

A further consideration involves the domain of individual choice, and the difference between biological sex and gender identity. Even when biological sex at birth is not ambiguous, our sensibility towards gender, and the awareness of the non-correspondence between biology and identity, implies a personal choice. Individuals often choose whether to adhere to their biological sex or not.

Hence the categories of transgender, gender queer, non binary, a-gender, give rise to new possibilities of self-identification that do not limit to the traditional, ideal, philosophical binary division between female and male. [5]

The non-dimorphic character of human existence is objective and evident: such an awareness requires new cultural and artistic categories capable of shaping a representation of humanity that fits reality.

Art and music have always been a privileged means of representation for human beings and their society. New ideas, of course, call for a new artistic and musical sensibility, which is what has always happened in history.

Like all artistic and philosophic production, music has always reflected society and its changes. In our contemporary world, the importance of gender related issues constitutes a challenge in rethinking musical theory and musical categories.

The traditionally generated sound, that is the sound originating from a musical instrument, features a fundamental character of steadiness. Any physical sound obeys to physical laws, and can be represented through its fundamental physical characters: frequency, amplitude, timbre, and duration. A sound is identified by all of these physical properties. [6]

Once the sound has been produced, it can be modified in duration, amplitude (in certain musical instruments only), and sometimes in frequency, while it can hardly be modified in terms of timbre. This property, timbre, depends on the waveform and

provides the fundamental characteristic of a sound, its voice, its peculiar way of hitting our ears.

With the electronic sound, a new possibility must not be overlooked: the capability of influencing any of the physical properties of a sound while the sound itself is being produced.

It is also true that sound manipulation has attracted composers of acoustic music, especially during 19th century.

Giacinto Scelsi with his *Quattro pezzi su una nota sola* (Four Pieces on a Single Note), 1959, for orchestra, constitutes a good example of the research on timbre changes on a single sound. However, while in instrumental music any timbre modification depends on an addition of instruments to a whole, like in the above mentioned orchestral pieces, in electronic music a single sound can be manipulated without any addition of external sounds. This marks a big difference not only in perception, but also in the way music can be related to reality and to the ideas, the concepts, and the challenges of our contemporary society. [7]

Listening session (Scelsi)

A striking example of electronic manipulation of a single sound, is constituted by the production of Éliane Radigue, whose pieces seem to transfer Scelsi's attempts and researches into electronic music.

Her electronic works, dating back to 1970-2000, are frequently based on the manipulation of a single sound, generated through the ARP synthesizer (Fig.2), with its multiple inflections and gradual modifications in time. [8]

Listening session (Radigue)



Fig. 2. (ARP 2500 Synthesizer)

This possibility in electronic sound reflects the same elements of instability in our society, especially in terms of identity. Floating identities, such as non binary gender identities, can thus be easily represented through electronic sound.

If instability and mutability play an important role, I would maintain that electronic sound features a very important coexistence of two characteristics: as above

discussed, it is very variable, but at the same time deeply tied to its inner character of being a sound, that particular sound with those particular features.

Digital sound is constantly varying, yet it nevertheless retains its inner identity.

This is true for contemporary electronic sound, and the same property can be reflected into our contemporary multiplicity of gender identities. These can be seen as a constant variation, a constant movement across the many possibilities laying beyond female/male dualism, though keeping a basic kernel that identifies our deep inner identity as human beings.

A further research on electronic-generated and digital sound might involve Additive and Subtractive Synthesis. This latter, in particular, features philosophical implications related to the presence of a whole that gives origin to a potentially infinite variety of sounds. Additive Synthesis, too, may be seen as a means to generate a sound out of a potentially infinite choice of peculiar sub-elements. The theoretical implications of these methods for sound synthesis are evident in the field of gender theory related to sound, and call for additional engagement and research.

In conclusion, the opinions expressed in this paper show a merely theoretical approach. The hope for the future is that both scholars and creators can interact and engage in further research on the relationship between electronic sound and non gender-binary identity.

References

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