



Article

The visual culture and the technique in images produced by students of undergraduate courses

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Abstract

This paper presents the results of a study that aimed at problematizing how undergraduate students of a Federal Higher Education Institution represent technique and technology – both key players in visual culture – in images produced by themselves. Those images were produced during photography workshops where the following concepts were addressed: visual culture; image; technique and technology. There were 105 workshop participants (52 pairs). They produced 65 photos of their choice of phenomena in and around university grounds. Afterwards, they answered the following questions: Justify your choice of phenomenon; Is there technique in this image? (Justify your answer); Is there technology in this image? (Justify your answer). Next, the photos were projected, and the group discussed the concepts of visual culture, technique and technology. Analysis of students' written responses indicated that when choosing and justifying the photographed phenomena they possess a visual culture "based on visibility, the propensity to picture or visualize existence". Most students understood technique as a means to reach a certain end. They also mixed up technology and technical apparatus and did not criticize technique or technology. All students showed familiarity with the artifact 'cellphone' but none of them criticized its use. Contemporary artifacts – cellphones in particular – are such an integral part of our everyday lives that it is difficult to distance oneself from them, especially given that our everyday actions are so imbued with a symbolic system grounded on technical rationality that it can be difficult to be puzzled by that which is familiar. That is why we fail to problematize technique or technology, both of which play a large part in our material and immaterial culture.

Keywords: Technique, Technology, Photography, Undergraduate courses.

Overview

The goal of this paper is to contribute to the ongoing discussion on technique and technology in Education. The introductory section consists of a brief history of the research group led by me, to provide context on the necessity of problematizing technique and technology. The following sections present the investigation's theoretical framework, data-gathering procedures, discussion of results and conclusion.

Introduction

The research group Education, Discourse and Media, of which I am a member, focuses on reading and studying discourses (especially imagetic ones) materialized as texts in a variety of media and produced for, or during, educational practices of formal or non-formal nature. We consider discourse to be the enunciative act that constitutes itself in the very moment it is produced by its author – materialized as text and, later, read by a

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reader. Our working concept of text is a unit that has meaning and that can be perceived by sight, hearing or touch and engaged with by users in a communicative interaction. This approach encompasses speech, writing, photos, films, television shows and hypertext alike; consequently, texts involve their respective media as well as the production of meaning (GOUVÊA, 2000; AMORIM, 2002).

In these terms, we can think of speech as text of the oral verbal type and of radiophonic texts as another type of oral text. Therefore, naming and categorizing a text must take into account the social conditions of its production, and this includes describing its media and respective reading conventions – the social conditions that regulate the production of meaning. After Bakhtin (1986) and Amorim (2002), I work with meaning as something produced during the discursive interaction between author and reader, regardless of whether the latter is a virtual or an actual reader.

In a former study, I have analyzed printed images in high-school Physics textbooks with the goal of elucidating the pedagogical positions held by the authors. I noticed then that many images represented technical artifacts as tools and machines, which led me to study how technique and technology are represented in images in Physics textbooks of the 20th and 21st centuries.

One of the goals of studying the representation of technique in textbook images was to bring the discussion about technique to K-12 education. That is also a key aspect of the study reported in this paper regarding representations of technique and technology on images produced by Federal Higher Education students of different areas² who are preparing themselves to work as future schoolteachers.

Why work with image production? The experience I have gathered over many years of research points at the need to not only read pre-produced images but also engage in imagetic production, since making their own images has proven invaluable to help students develop a critical stance towards media and get a better grasp of how intentionality and tactics work in different mediatic languages.

Another reason behind this investigative choice is that the students who were my research subjects are themselves preparing to work as teachers, and so I hope that by problematizing the concepts of technique and technology they may become more receptive to the idea of discussing these concepts from an educational perspective, both in undergraduate courses and in K-12 classrooms, in order to understand how technique and technology are constitutive elements of the visual culture of both teachers and students.

The theoretical framework of this investigation involves specific definitions of visual culture, image, photography, technique and technology, which will be presented next.

Visual culture

A definition of visual culture must rest upon a definition of culture. According to Cucho (2002), culture encompasses all the ways we live and think, expressed in everyday practices related to leisure, work or domestic life. Likewise, Canclini (2005, p. 41) sees culture as “social practices or processes of production, circulation and consumption of meaning. Meaning lies neither in events nor in subjects or objects and is therefore constructed, situated in historical contexts.”

To Hall, two people belong to the same culture when they share a common repertoire on the world. This repertoire does not have to be exactly the same, but there are significant similarities in how members of the same community interpret what happens in the world and how they “signify” that world.

2 In Brazil there is a special type of higher education course called “licenciatura”, whose students specialize on a particular school subject (e.g. History, Biology) and also follow Education courses, thus preparing themselves to be schoolteachers.

But what is visual culture? To Sérgio (2014), understanding visual culture requires understanding the notions of sight and visibility, as defined by Walker and Chaplin (2002, apud SERVIO, 2014, p.212):

(...) sight as the physiological process by which light impresses the eyes, and visibility as socialized gaze. The optical systems of a Brazilian, an European or an African person are not different, unlike the way each of them describes and represents the world, since they have different ways of looking at this world – which yields different representation systems. (p. 212)

It follows that visual experience is not neutral, because there are different social practices and cultures and “therefore [visual experience] cannot be understood as a natural or universal experience in the sense that everyone’s experience would be the same, regardless of historical context” (SÉRVIO, 2014, p.198).

The concepts of sight and visibility lend themselves to different research pursuits, both separately and combined. Certain visual culture scholars study sight-related devices and historical techniques, while others focus on visibility as the “discursive determinations, ways of looking that are as conditioned by sight mechanisms as by that which we are made to see” (JAY, 2003, apud SARDELICH et al., 2016, p.160). This means shifting from *visible* to *visual* and taking into account image production, circulation and consumption, as well as the interaction between observer and observed. Visual culture studies seek to understand the “localized mechanisms of the production of meaning – dialogical meaning, which is to say, socially constructed meaning, mutable and not pre-formed or immanent to its visual source” (MENESES, 2003, p.17) – in other words, they work with visibility.

According to Mirzoeff (1999, p. 20), visual culture is a “tactic to study the genealogy, definition and functions of everyday life in the post-modern era from a consumer’s perspective, rather than a producer’s”. He stresses that visual culture is not a history of images, nor is it dependent on images themselves, but instead focuses on the propensity to live through images or to visualize existence, since the visual realm is “an ever-challenging place of social interaction and definition in terms of class, gender, sexual and racial identity” (MIRZOEFF, 1999, p. 20 apud SARDELICH, 2006, p.211).

Sérvio (2014, p.207) explains that

To Mirzoeff, post-modern culture is visual not on account of images themselves but due to “the modern propensity to picture or visualize existence”. He believes that this propensity has a more significant role in the contemporary era than ever before and that it is peaking in our day and age. To him, picturing or visualizing existence is something felt as compulsory in the post-modern era; as individuals situated in the current capitalist, globalized and technological society, we have an unprecedented ability to process visual information. Still according to Mirzoeff, “this remarkable ability to absorb and interpret visual information is the basis of industrial society and becomes even more important in the age of information. It is not a natural human attribute, but rather a relatively new learned skill” (p. 5). The proliferation of images would be a consequence of this sight-based sociability. Technological advances respond to this desire to visualize.

For the purposes of this research, visual culture consists of ways of living and thinking mediated by images (representations of things as well as mental images) produced and/or interpreted by historically and socially determined subjects. This means that visual culture is not one and the same to socially diverse subjects, and that those subjects can attribute different meanings to the same image, regardless of its type (materialization as any sort of contemporary media, artwork etc.) and of its context of

production/consumption (everyday practices related to work, leisure or domestic life). Therefore, after Cancline and Mirzoeff, I see visual culture as “the practice or process of production, circulation and consumption of meaning in social life by means of picturing or visualizing one’s existence”.

Image

Images are the oldest traces of human life to have reached us. “The Pre-Historical world is known to us through inscriptions in cave walls or other media, such as vases. Other known examples of prehistoric imagery are dolmens, menhirs, obelisks, and also reliefs, sculptures and statues that often give us a glimpse of the greatness of ancient civilizations” (KNAUSS, 2006). In this day and age, we live with fixed and moving images that are created, stored, reproduced and transmitted using various media.

The term “image” is polysemic.

Nowadays, it brings to mind visual arts (such as paintings, drawings, illustrations), images circulating in mass media (such as television, photographs, films), or yet the images Facebook displays on our cellphone screens. However, the word image may also refer to mental images, since images also form themselves in our minds when we hear narratives of an event and those images draw on the imagetic repertoire we have built throughout our social and cultural history. Thus, the term image can also pertain to the representations we construct of a worldview, a culture, a religion etc. (OLIVEIRA et al., 2006, p.10)

All images cited by Oliveira et al. refer to real objects.

An image is “a representation of something that is not present, like the appearance of something that was removed from the place where it originally stood (...). Photography, videos, cinema, all of them offer us images that are merely the appearance of the objects they represent.” (ASSUMPÇÃO, 2019, p. 47).

In their shared understanding of images as traces or objects that exist in reality, Knauss, Oliveira and Assumpção consider the image to be the representation of a referent. This approach calls for a more detailed discussion of the concepts of representation and analogy, since according to the aforementioned authors all images have, in some degree, an analogical link with the reality they represent.

In order to problematize the concept of representation, I turn to a contemporary author: according to Hall (2003), there is a clear link between representation and language-mediated culture (considering both verbal and/or imagetic languages) since we produce and communicate meanings via cultural representations shared with other members of the same culture. Those representations are expressed in different languages – among them, imagetic language – and originate in various everyday life situations. Representation is necessary because we cannot think or speak without it. It is not possible for us to access reality in our minds or through our words. We can only speak or think using concepts (HALL, 2003), but in order to communicate the ways we represent those concepts we must be immersed in the same culture as the person we are communicating with.

For the purposes of this study, an image is the representation of a thing in its material and conventional aspects. A proper discussion of the latter requires delving into the concept of analogy.

According to Gouvêa and Oliveira (2010), certain scholars believe that all sorts of imagetic representation must necessarily involve analogy, in varying degrees that determine each image’s level of iconicity. On one hand, “perceiving [images] as mimetic calls for discussion of the imagetic trait of imitating the world (reality) as a need for illusion”

(AUMONT, 1993, p.200); from this point of view, photography can be perceived as completely believable by virtue of being essentially objective. On the other hand, when the discussion is centered on reference itself, analogy becomes secondary as it is considered accidental in regard to a greater process: the symbolization of reality.

Gouvêa and Oliveira point out that to Barthes (1990) all images have at least two messages, denotative and connotative (and if accompanied by text, the image will also have a linguistic message). When we read an image, the first connotative meaning is of the *perceptive* kind (also called denotation). Because describing images requires the use of socially-constructed verbal language, denotation is not free from cultural aspects and can therefore be considered as a particular type of connotation. The next level of connotation is the *cognitive* level, where reading relies more clearly on the observer's culture. For its turn, *ideological* or ethical connotation incorporates judgement and values to imagetic interpretation.

To Barthes (1990), then, all images are conventional and part of a cultural context.

Photography

Photography (photo = light; graphé = writing) is the result of how certain substances undergo chemical reactions when exposed to light.

Even before an image is formed, photography is a process – one actually known for millennia: light acts upon certain substances, causing chemical reactions; those substances are referred to as *photosensitive*. A photosensitive surface will suffer temporary or permanent changes when exposed to light. It retains traces of the effects of light. Photography begins when these **traces** are fixated, in a more or less definitive manner, and directed toward certain social usages. (AUMONT, 1993, p. 164, emphasis in original)

From its beginnings to the present day, and through various technical devices, photography has become increasingly pervasive in everyday life. It has long been and continues to be widely regarded as a faithful copy of reality, because photography captures moments.

According to Barthes (1984, p. 46-47), the emotion of observing an image involves the notions of *studium* and *punctum*. *Studium*, from the Latin verb *studare*, represents that which does not puncture, while the *punctum*, from the Latin verb *pungere*, is related to stinging, piercing. Photos that elicit “a general or polite interest have no *punctum*. The *studium* encompasses, among other things, the photographer's intentions, which reveal themselves by means of the choices that are present in the photo” (BARTHES, 1984, p. 82). To Barthes (1984, p. 36), the *punctum* is also a roll of the dice: “A photo's *punctum* is the spark of chance in it that *punctures* me (but also mortifies me, wounds me)”.

(...) the magical nature of images plays a key role in how we understand their messages, because they are codes that translate events into situations and processes into scenes. Images are mediations between man and world, but they come to stand between world and man, making men organize their lives around images instead of using them. (FLUSSER, 2011, p. 23)

The photographic universe is ever-changing, and one photo is regularly substituted by another. New posters show up on walls every week; new publicity photos take the place of older ones in shop window displays; there are new illustrated journals at the newsstands every day. We are not used to certain photos, but rather to photos changing constantly. It is a new habit: the photographic universe makes us get used to “progress”. We no

longer notice it. (FLUSSER, 2011, p. 89)

To keep the current photographic universe from making us used to “progress”, we must undertake the two movements proposed by Barthes: the *studium* and the *punctum*. That was my goal while discussing the images produced by the students who are the subjects of this study.

Technique and technology

Transformation is integral to human culture; it has long been and continues to be tied to technical development. Nowadays, transformation is also linked to modern technical development in particular, since the artifacts and processes we use and that are effectively part of our environment are technical products. They shape our material and immaterial culture.

According to Wilke (1994, p. 22), “Technique is originally knowledge about reality in general, as well as knowing how to produce everyday objects and works of art”. Technique, then, has long been related to making something using one’s hands, and those artifacts constitute the material culture of bygone times.

Technique first began as mediation between man and nature; it is a human production and it has, in turn, produced the human being by allowing us to develop capabilities and to organize ourselves. Therefore, “it is possible to say that at a first glance technique encompasses all means used by mankind to enhance its capabilities” (SOUSA, 2013, p. 16). Likewise, technique has always related to the material and immaterial culture of socially and historically situated human beings. This is the concept of technique underlying this study. As for technology, it is considered in its etymological sense, according to Álvaro Vieira Pinto (2005): the science of technique (the logos of technique).

Craia and Pecoraro (2016, p. 4) state that “technique and technology must be approached as the reality of our day and age, (which means at once as factuality and as world meaning)”, (...).

Craia and Pecoraro clearly do not work with the same concepts of technique and technology employed in this study; those words are polysemic and this difficulty must be addressed before one can engage the challenge posed by the authors.

A different conception of technique posits that it precedes modern science and that technology is a result of the interplay between technique and modern science. A third definition of technique comprises the abilities, skills and procedures to create artifacts, while the technical phenomenon would encompass both technique and science. A fourth approach believes technique and technology to be interchangeable terms. Finally, technology can be understood as the techniques of a particular society in a specific period. Throughout the following paragraphs, the terms ‘technique’ and ‘technology’ take on these various meanings according to the scholars whose propositions will be examined.

In order to face Craia and Pecoraro’s challenge, I turn to scholars such as Mumford, Ellul, Bunge, Marcuse and Vieira Pinto.

According to Mumford (1979, p. 21-22, apud SOUSA, 2013, p. 12), fascination with technique can lead to dehumanization. He also states that both reality and our perception of reality are impacted by technical progress and that this same progress turns human beings into mere components of social mechanisms – essentially, into cogs. Mumford, however, does not advocate a “return to a mythical pre-technological era of human purity, because he does not see that as a possibility, since we are immersed in technology and must therefore direct our efforts to humanization, so that we do not get lost among mechanisms” (SOUSA, 2013, p. 5).

By considering technique as applied science, Mumford (1979) and other scholars posit that science precedes technique. To Ellul, however, “technique comes before

science. (...) It is difficult to establish clear boundaries between technique and science these days, but science continues to depend on technique to develop itself" (ELLUL, 1968, p. 12).

According to Ellul (1968, p. 21),

A technical operation consists in work done with some sort of method to reach a goal. When this operation involves conscience and reasoning, we have a technical phenomenon. It is, then, in the shift from a technical operation to a technical phenomenon that we go from the realm of spontaneous experimentation to that of clear, voluntary and reasoned ideas.

Some contemporary Technique scholars would use the term technology for what Ellul defines as technical phenomena. We must then ask ourselves: what is the difference between technique and technology?

According to Cupani (2004), Bunge (1985) defines technique as the actions performed by human beings based on prescientific knowledge and with the goal of controlling or transforming nature, while technology would refer to technical, scientifically-based actions. Bunge sees technical action as a form of labor in that it produces something different from what preceded it. This means that Bunge sees close ties between technique and artifacts – artificial objects and processes (CUPANI, 2004, p.501).

Still according to Cupani (2004, p. 496), Bunge considers technology to be "The area of knowledge dedicated to designing artifacts and planning their making, operation, adjustments, maintenance and monitoring, all in light of scientific knowledge." (BUNGE, 1985, p. 231). However, according to Cupani (2004), Bunge does not understand technology as the mere utilization of scientific knowledge; it also implies the search of a specific knowledge, which in turn originates *technological theories*. For the purposes of this study, that means that technology has its own epistemology.

Marcuse (1998) points out that technology must be considered as the social and historical project of a society based on a rationality model that ensures dominance over things and human beings alike and geared towards ever-increasing efficiency. To him,

(...) specific domineering goals and interests are not external additions to technology: they are present in the very construction of the technical apparatus; every instance of technique is a historical and social project: it projects what a society's governing interests intend to do to people and things. (MARCUSE, apud HABERMAS, 2014, p.77).

Marcuse believes that it is possible to break away from technical rationality. Throughout history, mankind has gradually abandoned the aesthetic dimension in favor of the performance principle, which has come to dominate human existence.

Marcuse's goal is to reinstate the central role of aesthetics and to make it an element of a new conception of reality, thereby sketching a new governing principle for mankind's relationship with the world: rationality would incorporate sensibility and imagination, and from this connection would emerge a technological rationality with eminently libertarian goals. (SILVA, 2013, p.49).

This rationality can only be reached by overcoming the current stage of our contemporary technological society. To Marcuse, that requires "building an achievable socialism project, with technological progress as its key transformative aspect" but breaking free from the performance principle (MARCUSE, 2015, p.217).

Seeking to broaden the discussion on technique and technology to include a Latin-American philosopher, we turn to the Brazilian Álvaro Vieira Pinto. In his discussions of the

historical concept of technique, Pinto says that “in attempts to overcome his discordances with nature, the human being produces new living conditions, transforming both material reality and social relationships” (SOUSA, 2013, p.17).

According to Kleba (2006, p. 3), to Vieira Pinto “By technique, not only is nature – the material reality – (...) recreated, but subjectivity itself changes its way of observing the world”. This means that technique impacts both society and culture.

Viera Pinto (2005) believes technique to be “the ultimate mediator between thought faculties and the concrete world, the link between abstraction (which involves knowledge and intention) and its objectification in the material world.” (...). (p. 201). Likewise, “not only is technique inconceivable without man, but it will never dominate him. It is actually never out of his control” (PINTO, 2005, p. 158).

To Vieira Pinto, technique and technology are two separate social and cultural phenomena:

In its first, etymological meaning, “technology” refers to the theory, the science, the study, the discussion of technique, and the latter must include arts, craftsmanship, professions and ways of making something. (...) Technology as “logos of technique”. A second meaning of “technology” is interchangeable with technique. This is indisputably the most common and most popular sense of the word, used in everyday contexts, (...). Closely related to the former meaning, “technology” can be understood as the set of all techniques available in a certain society, during any stage of its development. (...) Lastly, there is a fourth sense for the term “technology”, (...) the ideologization of technique. Concisely, one may say that in this case the term technology refers to the ideology within technique. (PINTO, 2005, p. 219).

Pinto (2005, p.80-90, apud SOUSA, 2013, p.18) argues that in the relationship between man and machine in an individualist society – such as capitalist ones – machines take maximum individual advantage in favor of the capitalist; in a humanized society, machines could establish cooperative relationships between men. In this view, machines are not evil in and of themselves, and the problem lies with the productive relationships machines are integrated into.

According to Álvaro Viera Pinto, the path to a humanized society involves education and its upholder must be the State. It falls to the State to properly invest in education in order to lessen the distance from developed countries. Pinto considers education as an instrument for national sovereignty.

Such education must prioritize the discussion of technique and technology, inasmuch as they “contribute to build mimetic or fraternal relationships between man and his environment, for man would no longer compete with nature but become its partner instead, which was Marcuse’s pioneering intuition.” (ROSA; TREVISAM, 2016, p. 745).

The study

As university students are constantly exposed to images in a variety of media and taking photos is an everyday activity to them, I supposed that they might be able to formulate ideas about technique. I therefore set out to analyze the images produced by students of different areas (see footnote 2) of the Federal Higher Education Institution where I teach. Those students participated in photography workshops where I sought to understand what sort of representations of technique and technology (constitutive elements of visual culture) they would perceive to be at work in their photos.

There were nine photography workshops with a total of 105 participants, comprising students of different areas (all preparing to work as schoolteachers): undergraduate students of Education (44 students, E1 to E44); Music (2 students, M1 and

M2); Drama & Theater arts (10 students, DT1 to DT10); Social Sciences (16 students, SS1 to SS16) and History (25 students, H1 to H25), as well as 8 Information Systems graduate students (IS1 to IS8³).

During a meeting of the Didactics Department, of which I am a member, I asked my colleagues (preferably those teaching courses with students from different areas) whether they could allow me to use time slots in their classes for workshops related to my research. The teachers were receptive, and I was able to offer four such workshops, two during the university's morning shift and two during the evening shift, which ensured I had students from a variety of areas. One member of my research group agreed to cede me some classroom time as well, so there were four more workshops for Education students, two for that teacher's students and two for my own. The eight Information Systems graduate students participated in the study because their teacher researches computer systems for Distance Education, and six of them are teachers themselves.

The workshops had the following structure: first, I explained that the photos produced by the students and the answers they would give to questions posed at the end of the workshop would be used as research data. All participants were asked to fill in their information at the Voluntary Informed Consent Term; there were no objections. The students were divided into pairs and given ID numbers: Education students would be E13 and E14, etc. After discussing their understanding of the term 'phenomenon', I asked them to take photos of a phenomenon in or around university grounds. Upon their return, they filled out a form consisting of: ID number; Gender; Age; Area of study; Semester; University entry year; Chosen phenomenon – justify your choice. Next, they would choose one photo among their produced set and answer two questions: 1) Is there any technique in this image? Justify your answer. 2) Is there any technology in this image? Justify your answer.

While the students filled forms and answered questions, I uploaded the files of their photos to a computer. Once everyone was done with the paperwork, we would project the images and discuss the concepts of technique, technology and visual culture based on their images and on their answers to questions 1 and 2.

Some of the following reflections are based on what the students wrote. However, it is important to remember the questions driving this study: what sort of images did the students produce? Which meanings of technique and technology (constitutive elements of visual culture) are represented in the images (photos) they produced?

Choice of phenomena

The workshop participants were tasked with photographing a phenomenon (an event). They chose different sorts of phenomena: social ones – the Little Blue Wall⁴ (SS9 and SS10, picture 61); natural ones – sunlight filtering through trees (E21 and E22, picture 18); political ones – visual manifestations on gender (H1 and H2, picture 9) and artistic ones – a work of graffiti about Amarildo⁵ (M1 and M2, picture 6).

3 SI8 was actually a teacher in the Graduate Program in Information Systems, but in the context of the workshop he was a student.

4 The Little Blue Wall is a place in the campus where students who need to earn extra money display snacks for sale. The snacks are left in boxes with price tags and a smaller box attached to collect the money. It is a rudimentary self-checkout system, with nobody present to ensure that people are indeed paying for the snacks. To this day, we have yet to hear of stolen money or snacks taken without payment.

5 Amarildo Dias de Souza, a worker who lived in the Rocinha slums in Rio de Janeiro, was arrested and killed by policemen in July 14th, 2013. His body has yet to be returned to his family.



Picture 1.
Source: Author's research archives.



Picture 18.
Source: Author's research archives.



Picture 9.
Source: Author's research archives.



Picture 6. [Transcription & translation: *Cadê o Amarildo?* = Where is Amarildo?]
Source: Author's research archives.

The images produced by the students

Since the students were not assigned a specific subject for their photos, they ended up producing two sets of images: a fairly heterogeneous one and a more repetitive one. Interestingly, the latter was produced by day-shift students of all areas, featuring themes like visual protests, such as graffiti and other manner of inscriptions on walls and doors (pictures 4, 9, 11 and 35), and the Little Blue Wall, a place to buy snacks (pictures 1 and 7). Nature was a recurrent subject in the photos taken by students of all areas and

shifts, such as portraits of sunlight filtering through a tree (picture 18) or the full moon (picture 58).



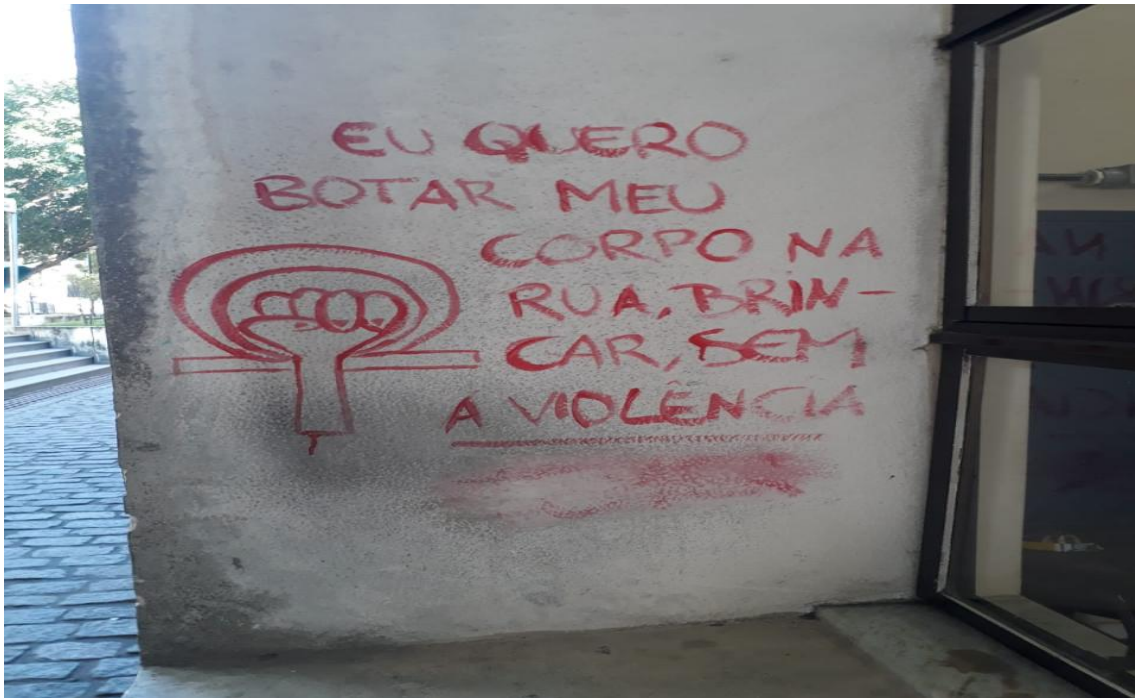
Picture 4. [Transcription & rough translation: *Liberdade* = Freedom; *Resistência* = Resistance; *Autonomia* = Autonomy; *Cahuni* (Centro Acadêmico de História da Unirio) = Unirio History Students Union; *Isso é uma porta (frente)* = This is a (front) door; *Sancta pika* = 'Holy dik', with a purposefully pseudo-archaic misspelling; *Só facista de merda* = Only fucking fascists; *Vc vai ficar igual um jabnzinho* = Ur going to be like a jabnzinho]

Source: Author's research archives.



Picture 11. [Transcription & rough translation: *boy trans não é bagunça!* = trans boys are no mess! ; *1ª Bienal Autônoma de Artes* = 1st Autonomous Bi-yearly Arts Festival]

Source: Author's research archives.



Picture 35. [Transcription & rough translation: *Eu quero botar meu corpo na rua, brincar, sem a violência* = I want to have my body out in the streets, have fun without violence]
Source: Author's research archives.

Upon returning from their photographic expeditions, the students were asked to name the phenomena they had photographed and in so doing they did a first reading of their own images. I observed that since the students produced mostly photos, and most students declared they had not used any special cellphone tools or resources to take the photos, those images have “a *denotated* message that is the *analogon* itself, and a *connotated* message that is the way society invites us to read those images, which in a way expresses what society thinks” (BARTHES, 1990, p. 13). A few examples: students E35 and E36 said that they had chosen to take a picture of “a toilet bowl thrown out in the woods, at the foot of a hill behind university buildings” (picture 10). Their justification was “environmental carelessness”. Students IS3 and IS4 took a photo of “water running from a faucet” and justified their choice by saying that “the flowing water represents life” (picture 63). The denotative content of those images is, respectively, a toilet bowl and a faucet, both of them familiar objects to any city-dwelling person and thus part of a cultural repertoire that allows a great number of people to read those images similarly. However, the justifications for capturing those events could differ from those given by the photographers & students; for instance, both the open faucet and the discarded toilet could be read as the waste of expensive things. Therefore, there may be differences among the connotated messages, but there are also connections, because society subsidizes image-reading to some degree.



Picture 10.
Source: Author's research archives.

There are levels to image-reading (BARTHES, 1990). The majority of students' justifications featured *cognitive* connotative level readings, which relate more clearly to the observer's culture. An example would be: "This image, that in the West means femininity, has another impact on a Middle-Eastern reader who is immersed in a context where men too wear skirts. Therefore, an image can be perceived differently according to one's *cultural background*." (IS1 and IS2 on picture 59).

The ethical or *ideological* connotation, which incorporates judgement and values into the interpretative movement, was present in some justifications: "Pictures of writing and graffiti-like inscriptions on university walls"; "Those writings are a call for order and for loving your neighbor. I think it's an urge, or desires that move us through slogans (not always leading us down a good path)", said H21 and H22 on picture 35. "The graffiti 'Where is Amarildo' is an artistic and social phenomenon strongly linked to its political, social and economic context" (M1 and M2 on picture 6). Student H21 expressed her judgement – "I believe it is an urge" – and values "not always leading us down a good path". Likewise, students M1 and M2 regard the work of graffiti 'Where is Amarildo' as an artistic phenomenon.

In the reading (justification for his photo) formulated by student IS8, it is possible to discern the concretization of the emotion of observing an image, as proposed by Barthes (1984) with the notions of *studium* and *punctum*. Some pictures evoke a general interest and convey the photographer's intentions, choices that can be unveiled by an examination of their imprints in the photo: "A woman smoking, by herself, talking to people on Facebook on her cellphone", said IS8 of picture 64. In turn, the *punctum* involves "that which the observer adds to the photo – but that was already there" (BARTHES, 1984, p. 82): it is what animates the "spectator to go beyond what was shown, it is a sort of subtle offscreen, as though the image drove desire on to something beyond what it shows" (id., p. 85). "People smoking by themselves have their cigarettes for company, always available for interaction, anytime: during a break, when winding down, when you're tense and need to relax. Social networks, now accessible anytime on a smartphone, have become our

technological cigarettes. However, I want to stress the loneliness that social networks can bring, with their superficial and casual relationships”, said IS8 of picture 64.

In their performance of the roles of image producer (choosing what to photograph) and image reader (justifying their choice of phenomena to be photographed), the students show themselves to be contemporary beings participating in a visual culture, a visibility-based culture that has “discursive determinations; the way we look is as conditioned by sight mechanisms as by what we are made to see” (JAY, 2003, apud SARDELICH et al., 2016, p.160). The students produce images (choice of phenomenon) that circulate socially when projected for the workshop group to see, and they also consume images; there is an interaction between observer and observed (justification of their choices). I would, therefore, describe those students as possessing a post-modern culture that is chiefly visual on account of the modern propensity to picture or visualize existence, since according to Mirzoff (MIRZOFF, p.5, apud SARDELICH, 2006, p.211) “Picturing or visualizing existence is something we feel to be compulsory in the post-modern era”.

This propensity to make everything visual, to live through images or to visualize existence is connected to technological developments and this leads us to the second research question: what sort of representations of technique and technology (constitutive elements of visual culture) do students perceive to be at work in the photos they produced?

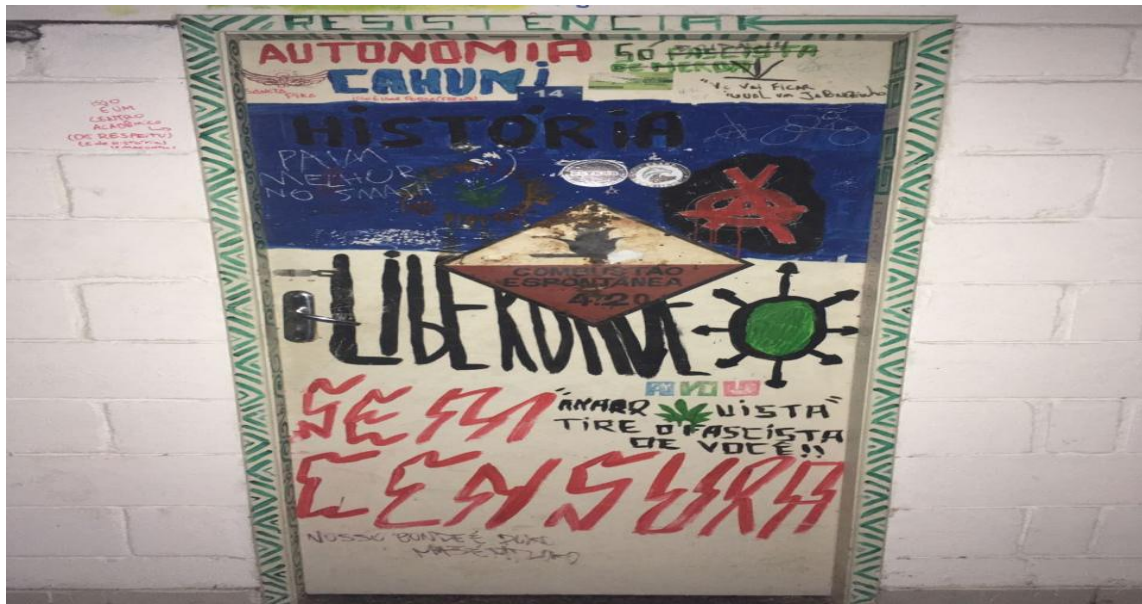
Technique

When asked about the presence of technique in their images, most students said that it lay in taking the pictures and in the artistry of the graffiti-makers, thereby agreeing with Sousa’s (2013, p. 14) definition of technique as “more closely related to the actions of man than to his environment (nature and culture), encompassing processes as well as artifacts as things”. Some excerpts that show students’ awareness of the processes involved in the production of photos (considered as artifacts) are: “yes, because I chose specific angles and light conditions to take the pictures”, said DT4 about picture 17; “Yes, aside from the framing that justifies our choice of images”, said H13 and H4 about pictures 4 and 5; also, “so that I could frame the moon to produce a silhouette of the Sugarloaf tram”, said IS2 about picture 58. Likewise, students who chose to photograph visual manifestations clearly stated the link between those manifestations and technique: “I do believe that graffiti itself is already associated with technique”, said M1 about picture 6; “yes, the graffiti on the wall uses a specific technique to convey its message”, said H4 about picture 5.



Picture 17.

Source: Author's research archives.



Picture 5. [Transcription & rough translation: *Resistência* = Resistance; *Autonomia* = Autonomy; *Cahuni* (Centro Acadêmico de História da Unirio) = Unirio History Students Union; *Só facista de merda* = Only fucking fascists; *Vc vai ficar igual um jabnzinho* = Ur going to be like a jabnzinho; *História* = History; *Liberdade* = Freedom; *Sem censura* = No censorship; *“Anarquista” tire of facista de você!!* = “Anarchist”, get the fascist out of you!!]

Source: Author's research archives.

On a similar vein, some students also pointed out that graffiti artists must master technique to produce their works; this points to a belief that making graffiti and taking a picture involve technical processes, in accordance with Bunge's statement that “artifacts are made in a rational manner, using rules to ensure success, that is, efficiency”. Some examples to that effect are: “Yes, I *positioned myself the best I could* to capture what I

wanted: sunlight filtering through the trees”, said E21 about picture 18; “The image ‘Where is Amarildo’ involves technique and it is a *well-made work of graffiti*”, said M2 of picture 6.

IS8 said that technique is the art of making, thus falling back to the Ancient Greek indistinguishability between art and craft. However, he also agrees with Marcuse and Vieira Pinto by saying that “[the photographed woman] is using her cellphone to interact on social networks. That is a way (a technique) of keeping in touch with people and it is also a *way of being/ of living/ of having relationships/ of working*”. In the latter quote, this “way” of doing things is technique, understood by Marcuse (1998, p. 38) as “a historical and social project: it projects what a society’s governing interests intend to do to people and things”. (...) to be/ to live like that is to submit to technique. Moreover, according to Pinto (2005), by using techniques, the human being transforms both material reality and social relationships, produces his own existence, his subjectivity, changes his way of regarding the world. By using her cellphone, the woman in picture 64 is changing her way of being/living, she is producing new cultural standards.

Some students said there was no technique in their images, because “the cellphone has resources that enable better resolution and better photo composition” (E33); “No, I used just a cellphone with its own technology” (SS1). In truth, all students whose answers were similar to those did not state that there was no technique, but rather that that technique was in their cellphones.

I had been expecting students to describe the techniques present in the images they produced, but only two students did that: IS7, who said of picture 64: “No, the picture describes the freedom of idle moments, when a person enjoys her free time to talk to people who are far away”, and IS8, on the same picture: “Yes, [there is] technique as the art of making, she is using a cellphone to interact with her network, which is a way (technique) of keeping in touch with people and it is also a way of being/ of living/ of having relationships/ of working”. To those two students, contemporary cultural practices are also technique.

Although students’ answers differed from my expectations, their representations of technique touch on the specific ways of doing something towards a specific end, which can be a material one/an artifact (such as photos and graffiti works) or an immaterial one/ways of living; therefore, ends and means are the material and immaterial culture of those students.

Technology

Most students linked technology to artifacts – that is, their cellphones: “All [pictures] were taken with my cellphone” (DT7); “yes, it was taken with a cellphone” (E7); “I did use technology, a cellphone” (SS12). A selected few mentioned cellphone processes: “yes, I positioned the cellphone the best I could to avoid sunburst, because then the picture would be too bright and we wouldn’t be able to see the trees”, said E21 of picture 18; “yes, even though you just point and shoot, the cellphone uses an automatic image filter to reduce the light”, said IS2. Clearly, most students mixed technology up with technical artifacts.

Some students wrote that the technology in their pictures lay in “making the building where the graffiti is, that involved technology”, said DT3 on picture 39; similarly, “building that ramp requires engineering”, said E11 of picture 27. These students subscribe to the third meaning of technology described by Pinto (2005, p. 218): “the set of all techniques available in a certain society, during any stage of its development”. This seems to me as the very definition of engineering, and therefore the students whose answers were similar to the quoted excerpts were working with Pinto’s third meaning of technology.



Picture 39. [Transcription & rough translation: *Universid@de popular* = University of the people, with the 'A' stylized after the anarchist 'a' (A)]
Source: Author's research archives.



Foto 27.
Source: Author's research archives.

According to Pinto (2005), the etymological meaning of technology is *logos* of technique; however, no students defined technology as the study of technique. Lastly, technology can also mean the ideologization of technique; this meaning showed up in one answer: “Yes, a technological apparatus, the cellphone, just like any device that is cutting-edge for its time”, said H18 about picture 43. To consider the cellphone an advanced device entails an apology of technology, or the ideologization of technique.

In regard to representations of technology, I observed that most students mistake technical devices for technology and understand technique as the means to reach an end.

Laymen tend to not acknowledge technological knowledge-based devices as technical and to deal with those objects empirically, either being unaware of or not needing to master the technological knowledge underlying their structures. Such was the case of my workshop students.

It is worthy of notice that contemporary media (photography included) “are omnipresent, they become increasingly central to our contemporary experiences and develop particularities in terms of production, circulation and consumption” (FISCHER, 2007, p.293). It becomes therefore necessary to educate our regard, (...) focusing on developing the ethical and aesthetical aspects simultaneously, (...). (FISCHER; MARCELLO, 2016, p.5). This matter of educating our regard raises anew the central role of aesthetics in Marcuse’s proposal: such education would afford us a new conception of reality and subside changes in the relationships between mankind and the world, incorporating imagination and sensibility into rationality and thus forging a libertarian technological rationality (SILVA, 2013).

Conclusion

The majority of workshop participants understood technique as the means to an end, mixed up technology and technological apparatus and made no critique of technique or technology.

All students were familiar with the technical device ‘cellphone’, but most of them did not criticize its usage. Although some students had an eminently critical approach in their choice of photo subjects (e.g. gender issues and the graffiti on Amarildo) and did mention in their justifications how those subjects were ideological and political, even those very students failed to criticize technique or technology. That is due to how contemporary artifacts – cellphones in particular – are part of our everyday lives to such an integral degree that it is difficult to distance oneself from them, especially given that our everyday actions are so imbued with a symbolic system grounded on technical rationality that it can be difficult to be puzzled by that which is familiar; that is why we fail to problematize technique or technology, both of which play a large part in our material and immaterial culture.

In our day and age, material and immaterial culture are visual culture. This means students picture and visualize their existences. Visual culture consists of ways of living and thinking mediated by images, in this case photos. In this context, the education of regards becomes paramount, so that future teachers can develop ethical and aesthetic sensibilities and feel able to discuss the visual culture of their students by problematizing technique and technology.

These are the aspects I chose to problematize during the workshops, because it is imperative that we engage our students on discussions about technique, technology and visual culture. That is particularly true of students preparing to work as teachers themselves, so that they become aware of and able to problematize technique and technology with their K-12 students, as well as the visual culture of the latter.

References

AMORIM, M. Vozes e Silêncio no Texto de Pesquisa em Ciências Humanas. **Cadernos de Pesquisa**, n. 116, p.7-19, julho, 2002.

ASSUMPÇÃO, A, M. **Entrelaçamentos entre leitura de imagens e estudantes de pedagogia**. 2019. 173 p. Tese (Doutorado em Educação) – Universidade Federal do Estado do Rio de

Janeiro, Rio de Janeiro, 2019.

AUMONT, J. A. **Imagem**. (Abreu, E, S. e Santoro, C., C., Trad). Campinas, SP: Papirus, 1993.

BAKHTIN, M. **Marxismo e filosofia da linguagem**. São Paulo: Hucitec, 1986.

BARTHES, R. **O óbvio e o obtuso**. Rio de Janeiro: Ed. Nova Fronteira, 1990.

BARTHES, R. **A câmara clara: nota sobre a fotografia**. Rio de Janeiro: Nova Fronteira, 1984.

BUNGE, M. **Seudociencia e ideología**. Madri: Alianza, 1985.

CANCLINI, N. G. **Diferentes, desiguais e desconectados: mapas da interculturalidade**. Rio de Janeiro: Editora UFRJ, 2005.

CRAIA, E. C. P.; PECORARO R. La Técnica en el ágora: repensar nuestro estado de cosas (Presentación). **Quadranti –Rivista Internazionale di Filosofia Contemporanea –v. IV**, p.3-5, nº 1-2, 2016.

CUCHE, D. **A Noção de Cultura nas Ciências Sociais**. 2ª ed. Bauru: EDUSC. 2002

CUPANI, A. A tecnologia como problema filosófico: três enfoques. **Centiæ zudia**, São Paulo, v. 2, n. 4, p. 493-518, 2004.

ELLUL, J. **A técnica e o desafio do século**. Rio de Janeiro: Paz e Terra, 1968.

FISCHER, R.M.B.; MARCELLO, F. Pensar o outro no cinema: por uma ética das imagens. **Revista Teias**, v. 17, n. 47, jan./mar., p.13-28. 2016.

FISCHER, M. R. Mídia, máquinas de imagens e práticas pedagógicas. **Revista Brasileira de Educação**, v. 12 n. 35 maio/ago. p.290-299, 2007.

FLUSSER, V.. **Filosofia da Caixa Preta: ensaios para uma futura filosofia da fotografia**. São Paulo: Annablume, 2011.

GOUVÊA, G. **Divulgação científica para crianças: o caso da Ciência Hoje das Crianças**, 2000. Tese de doutorado em Ciências. Programa de pós-graduação em Ciências do ICB/ UFRJ, 2000. 230p

GOUVÊA, G.; OLIVEIRA, C. I. de C. Memória e representação: imagens nos livros didáticos de física. **Ciências & Cognição**, V. 15, N. 3, 2010, p.063-083. Disponível em: <http://www.cienciasecognicao.org/revista/index.php/cec/article/view/368>, Acesso em 20 novembro de 2018.

HABERMAS, J. **Técnica e ciência como “ideologia”**. 1ªed. São Paulo: editora Unesp, 2014.

HALL, S. **Representation: Cultural Representations and Signifying Practices**. Hall, S. (Ed), London: SAGE Publications, 2003.

JAY, Martin. Relativismo Cultural e a Virada Visual. **Aletria: Revista de Estudos de Literatura**, v. 10, n.11, p. 14 - 28, 2003.

KLEBA, J. Tecnologia, ideologia e periferia: um debate com a filosofia da técnica de Álvaro Vieira Pinto. **Convergencia: Revista de Ciências Sociais**, v. 13, n. 42, p. 73-93, set./dez. 2006.

KNAUSS, P. O desafio de fazer História com imagens: arte e cultura visual. **ArtCultura**, Uberlândia, v. 8, n. 12, p. 97-115, jan.-jun. 2006.

- MARCUSE, H. **Cultura e sociedade**. Rio de Janeiro: Paz e Terra, 1998.
- MARCUSE, H. **O homem unidimensional**: estudos das ideologias da sociedade industrial avançada. São Paulo: Edipro, 2015, 247p.
- MENESES, U. T. B. de. Fontes visuais, cultura visual, história visual: balanço provisório, propostas cautelares. **Revista Brasileira de História**, São Paulo. v. 23, n. 45, p. 11-36, July, 2003.
- MIRZOEFF, Nicholas. **An introduction to visual culture**. London: Routledge, 1999
- MUMFORD, L. **Técnica y Civilización**. Madri: Alianza, 1979 © 1934.
- OLIVEIRA, et al. **Imagem e educação**. 1ª ed. v1. Rio de Janeiro: Fundação CECIERJ, 2006, 106p.
- PINTO, A. V. **O Conceito de Tecnologia**. Rio de Janeiro: Contraponto, v. 1, 2005.
- ROSA, G. A. de; TREVISAN, A. L. Filosofia da tecnologia e educação: conservação ou crítica inovadora da modernidade?. **Avaliação**. Campinas, online, vol.21, n.3, pp.719-738.2016; <http://dx.doi.org/10.1590/S1414-40772016000300004>. Acesso em 15 de fevereiro de 2019.
- SARDELICH, M. E.; GARCIA, A.; ALVES B. T. S. L. Cultura visual no Brasil: um panorama sobre a construção do campo de estudo. **RDIVE**, João Pessoa, v.1, n. 1, p. 158-175, jan./jun., 2016.
- SARDELICH, M. E. Leitura de imagens e cultura visual: desenredando conceitos para a prática educativa. **Educar**, Curitiba, n. 27, p. 203-219, 2006.
- SÉRVIO, P. P. P. O que estudam os estudos de cultura visual? **Revista Digital do LAV**, Santa Maria, vol. 7, n.2, p. 196-215 - maio/ago. 2014.
- SILVA, P. I. F. da. **Marcuse e a racionalidade tecnológica**: dominação ou liberdade. 2013. Dissertação (mestrado em Filosofia da Ciência e da Tecnologia). Faculdade de Filosofia e Ciências Humanas, Universidade de São Paulo. São Paulo, 2013.
- SOUSA, A. C. G. **Os engenheiros no fim do século XIX**: ações e ideias. 2013. 249p. Tese (Doutorado em História das Ciências e das Técnicas e Epistemologia). Universidade Federal do Rio de Janeiro. Rio de Janeiro, 2013.
- WALKER, J. A.; CHAPLIN, S. **Una introducción a la cultura visual**. Barcelona: Octaedro, 2002.
- WILKE, V. C. L. **A epistémica de dominação e o domínio da arte**. 1994. 120 f. Dissertação (Mestrado em Filosofia) – Universidade Federal do Rio de Janeiro, Rio de Janeiro, 1994.

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