A/r/cography

Art, Research and Communication

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ABSTRACT

This article aims at establishing the foundations for a/r/cography as an "art and communication"-based research methodology, inspired by a/r/tography yet more encompassing, and particularly suitable for the digital art world. As part of the larger family of practice-based research methodologies, a/r/tography presents various ways through which it can be explored, but since it is aimed at the arts and education, its scope is forcibly hampered by the fact that not all researchers and art-practitioners are necessarily teachers. However, since most of its underlying principles can be extended for non-teachers, thus arose the idea to propose a methodology that would retain ontological, epistemological and methodological assumptions, but would expand beyond the limitations imposed by the role of the teacher. This extension is called a/r/cography and is structured upon the interchangeable roles of <u>a</u>rtist, <u>r</u>esearcher and <u>c</u>ommunicator, as being intrinsic to the underlying living inquiry processes. Furthermore, this proposal is supported by the author's own experience from a/r/cographic processes in the creation, exhibition and communication of digital artworks.

CCS CONCEPTS

• Applied computing • Arts and humanities • Media arts

KEYWORDS

Digital Media Art, Methodology, Research, Communication, A/r/tography.

1 Introduction

> It is possible to retain what one might call the freedom of artistic creation and to use it to the full, not just as a road of escape but as a necessary means for discovering and perhaps even changing the features of the world we live in [1].

The artist/researcher is systematically faced with the need to choose a paradigm – a belief system based on ontological, epistemological and methodological assumptions – within which their work can develop and prosper. Among the many qualitative paradigms that have emerged since the 1990's, including blurred genre, arts based inquiry, scholARTistry and arts-based research, the latter (ABR) is mainly characterised by ontological relativism, transactional and subjectivist epistemologies, and hermeneutical and phenomenological methodologies [2]. A/r/tography is firmly rooted in the ABR paradigm, and is being increasingly adopted worldwide [3]. In a/r/tography knowledge emerges from the engagement of art making and teaching/learning, through living inquiry and reflective writing. This form of inquiry differs from the type of research that posits questions in order to define boundaries and describe what previously is known to exist. A/r/tography systematically questions on-going creative and artistic practices in order to create knowledge, rather than discover pre-existing realities. New understandings – not findings – are shared upon reflection on said practice [4]. Springgay, Irwin and Kind make a strong point in defending a/r/tography as a methodology by stating:

> Our arguments stem from a belief that if forms of arts-based research are to be taken seriously as emerging fields within educational research, then perhaps they need to be understood as methodologies in their own right, not as extensions of qualitative research [...] toward an understanding of interdisciplinarity not as a patchwork of different disciplines and methodologies but as a loss, a shift, or a rupture where in absence, new courses of action unfold. [5]

One could argue that the role of the teacher in a/r/tography is both a cornerstone and a limitation, as it potentially prevents its applicability to the artist-researcher who is not a teacher.

> A/r/tography [...] represents a uniquely arts and education practice-based methodology. Whereas arts-based research can apply to any discipline and is often used in conjunction with other forms of research (such as ethnography), arts-based educational research is an extension that recognizes the specific contribution arts-based research can make to education [6].

But this restriction of applicability does not resonate as a true rule-driven restriction, since the role of the teacher is also that of a communicator, one who structures knowledge and presents it both to students and peers. Furthermore, the artist goes beyond academia and engages in communication processes with audiences, curators and peers, only to name a few. So it is safe to claim that artists and researchers alike engage in the communication of knowledge with their audiences.

2 Justification

A/r/tography deals with the potential of using three different roles to iteratively achieve doing, thinking, exploring and sharing. Doing is the artist's business; in the same way that thinking and sharing are the researcher's tasks. But sharing, which is essentially the process involved in teaching/learning, can more broadly be regarded as a communication process, not exclusive to teachers.

2.1 Communication

In this light *communication* can be regarded as a more encompassing two-way concept than teaching/learning, and an adequate generalization in the present day. In the past it was not always possible to establish direct communication between artists and public, mostly due to limitations in literacy and access to venues, but that is no longer the case. Direct communication between artists and audiences through social media or at cultural events is now a prevalent option, no longer a prevalent limitation. This rationale is further supported by three observations:

1. Communication is a natural part, not only of the creative processes in art making, but also of art itself [7]. For Dewey art is the "most effective mode of communication that exists", "the most universal and freest form of communication", and "communication in its pure and undefiled form" [8].
2. The goal of research is to produce knowledge, and its dissemination is achieved – yet again – through communication. This is especially true of arts-based research, as

   > (...) its curricular function seems to be particularly aimed at an audience's reception of data presented through performances, images, or artistically conceived texts. Creators of such works hope to

change members of the audience through the experience of data crafted into various art forms [9].

3. As the acronym suggests, "a/r/tography is a coming together of art and graphy, or image and word" [10]. The etymology of -*graphy* is the Greek -*graphia*, referring to the process of writing or recording, which is the basis for asynchronous, non-verbal human communication. Furthermore, upon detailed inspection of the communication processes involved in a/r/tography one can identify several two-way processes that occur beyond the scope of education, for example, those connecting the artists to audiences, curators, other artists and researchers. In fact, if one should hope to carry the research to its full potential, then the communication processes can swiftly become complex and generative:

   > Learning nets and societies do not grow best by simplifying or rigidly supporting their parts or members, but rather with the complexity and freedom of these members, so long as they succeed in maintaining or increasing mutual communication [11].

Echoing the previous words of Deutsch, the author of the present article posits that not only is a/r/cography a suitable extension or amplification of a/r/tography, assuming the complexity and freedom of its practitioners, but even suggesting that this type of research should in fact be considered as "arts and communication"-based research.

2.2 New Media and Digital Art

The creation process of digital media artworks is often dependent upon collaborative interdisciplinary work, as the artist may need to involve a team of programmers, designers or technicians in the construction of the artefacts. This unique type of collaboration will require comprehensive documentation in order to form a common communicational space, relying upon effective media classification and organization [12].

Current new media and digital artworks often incorporate communication technologies in their very core, either by means of the creative process or actual technological integration in the artefact [13]. Digital media thrives over remote connections, communication and interaction between the virtual and the physical, the audience and the artwork. Its use aims at a greater capacity of action and impact with the audience, leading to the premise that digital media is actually disseminated or exhibited predominantly using communication technologies. But this umbilical connection to digital communication technologies goes beyond new media art and is extendable to research methodologies as well:

> We may speculate that, given the availability of new media technology, further shifts may occur in the modes of expression available to arts-based researchers when creating dissertations and disseminating research in the future. As Sullivan states, "the digital world is proving to be an especially rich setting in which newer conceptions of theory and practice in the arts are being explored" [14].

A/r/tographical work is rendered through the methodological concepts of contiguity, living inquiry, openings, reverberations, metaphor/metonymy and excess, which are enacted, presented or performed when a relational aesthetic inquiry condition is envisioned as embodied understandings and exchanges between art and text, and between and among the broadly conceived identities of artist/ researcher/ teacher.

This complex web of interdependences and relationships is generative, reflexive, responsive, communicative and creative, bearing results akin to the Deleuzian metaphor of a rhizome, as each iteration/generation, understood as a creative, reverberative, communicative or analytic stage of practice-based research, can potentially lead to (i) a more refined and expected evolution or (ii) a new and independent line of work. This a very familiar situation for artists, used to identifying the potential for a new artwork while working on a current project, thus setting it aside for future exploration.

A/r/cography enables the individual to simultaneously move in different directions, potentially facilitating new evolutions, derivatives, or even new projects, all stemming from a single initial line of inquiry. If a/r/tography was already considered as a methodology of situations by its creators, then clearly a/r/cography is a methodology of generativity, leading to "unanticipated change through unfiltered contributions from broad and varied audiences" [15]: stages through which the artists evolve through communication – with themselves, through writing and self-analysis; with the audience, by engaging in conversations, interviews or questionnaires; with other artists, through shared analysis and insights. Thus they adjust the artworks to reflect that very communication, incorporating the process in the artwork itself.

This is particularly suitable for digital art, as the possibility of alteration is far more inviting and non-destructive, unlike with painting or sculpture, since multiple generations – or versions – of the same artwork can coexist with only incremental effort, therefore also reinforcing the rhizome metaphor.

2.3 The A/R/C

The creativity behind the designation **a/r/tography** is evident in the use of the acronym to point out the close relationship with the arts. The proposed a/r/cography could fall short of its precedent's brilliance, were it not for the fact that the arc happens to be a rather suitable metaphor for the non-linearity associated with the ABR family of methodologies.

Unlike Benjamin's *flâneur*, who sets about on a journey of discovery with no fixed route or goal, the a/r/cographer uses the arc to intentionally unite departure and arrival points, but allowing for eccentric detours and the exploration of the periphery (as shown in figure 1), much like what happens with artistic creation and experimentation.

The arc is thus a protocol, "a modus operandi, a way in, through and with, (...) as a lure for feeling, doing, knowing and telling" [16].

The arc also enables the a/r/cographer to go back to the starting point through a different route, generatively incorporating new knowledge from the observations produced

along this route, effectively resulting in a new generation/ iteration, as shown in figure 1.
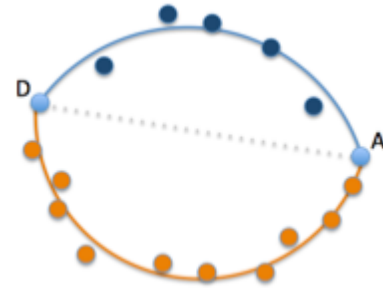

Figure 1: Above, the arc connects departure (D) and arrival (A) points, through the exploration points. Below, returning to the departure point through a different (orange) route, and further incorporating more exploration (or reverberation) points along the way. Source: author.
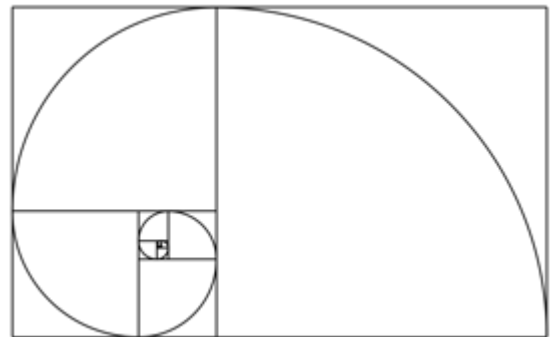

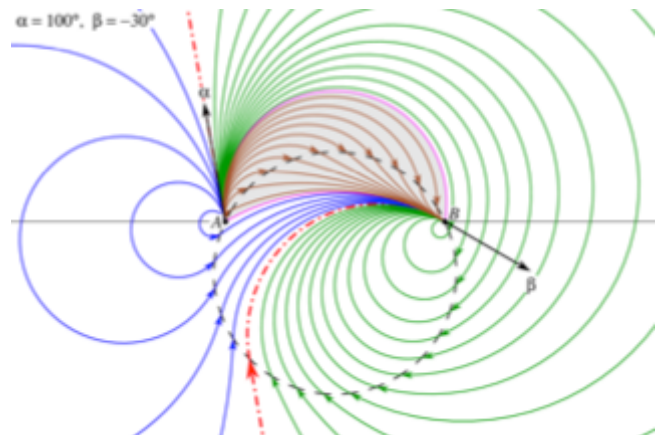**Figure 2: Convergence, illustrated by a Fibonacci's spiral drawn with arcs. Source: author.**

Figure 3: Apparent divergence, illustrated through biarcs families, connecting points A and B. Source: Wikimedia commons.

One could argue that the arc is not an accurate representation of the erratic flow of ideas and detours that stem from artistic

practice. As a counter-argument the author posits that the arc is indeed a suitable metaphor for detour with intent, non-linearity with goal, flexibility with purpose.

The metaphor is also very suitable as one can visualize the convergent progress in a research project like a spiral, tending towards a final objective through a generative multitude of connecting arcs, fostering the exploration and interconnection of a wider range of subjects than the linearity of traditional scientific methodologies would allow, as depicted in figure 2.

Another geometrical concept – that of the biarc, shown in figure 3, as a smooth curve formed by two arcs sharing a common tangent at the connecting point – may represent the exploratory eccentricity of the routes between points A and B, and appears as an interesting and appropriate graphic metaphor, since...

> (...) perception and experimentation obey laws of their own which cannot be reduced to theoretical assumptions and are therefore beyond the grasp of theory-bound epistemologies [17].

In the same work Paul Feyerabend also spoke about the abundance of reality, and the human ability to focus on very small portions of this reality. It is precisely because of this ability that the freedom to create and experiment gains importance, to allow divergence from the norm and to seek new routes.

The object of research is constructed through writing, rather than being discovered and then described. The biarc represents this freedom to apparently stray from the foreseeable course, and yet reach the initial goal through a longer, yet richer route.

3 Defining a/r/cography by instantiation

In March of 2019 the author was invited to make a presentation at the Fernando Pessoa University, in Porto, on the subject of Creative Research, as a first person narrative: the artist / researcher, whose artistic work is either the subject or the support of his research. For this purpose he revisited a five-year-old project, Principium[1], consisting of 26 digital collage canvas-printed pieces, enhanced by augmented reality. This was possible because of the comprehensive documentation and media classification the author produced during the creative development, as well as a series of reverberations that were brought along by several public presentations and exhibitions, including the writing of exhibition catalogues and a book[2].

In retrospect, Principium was an a/r/cography project, even before the idea of proposing a/r/cography as a methodology came about, and will thus serve as a practical example to illustrate the following sections.

3.1 Inspiration

Inspiration is a still rather vague and undefined concept, which has been referred to as a form of religious enlightenment, artistic insight, scientifically influenced intuition [18], or even a general construct characterized by evocation, motivation, and transcendence [19].

For the purpose of the present article, the relevance lies in establishing *inspiration* as a somewhat paradoxical first step in a non-linear, rhizomatic model, albeit not always conscious and identifiable, in the artistic creation process.

The inspiration behind an a/r/cography project may not be totally clear from the start and may need time to settle in, develop and fully manifest itself, and can even be affected by the ensuing work. Inspiration works like a seed, lying dormant at first, waiting for the right conditions to awaken, germinate and grow. Inspiration may also not stem from one single source or seed; therefore it may need other accompanying seeds or circumstances, and thus could find itself subject to evolution and transformation.

In the present example the initial inspiration behind the artworks in the Principium series came from occasional glimpses of illustrations from several human anatomy compendia[3], from the 15th to the 19th centuries, and the aesthetics behind illustrations created from dead bodies, whose poses generally denote heavy classicism and romanticism influences, giving them an almost surreal appeal. This initial seed evolved by influence of other sources, resulting in a stream where high speed photography of moving water, graphic symbols of mysticism, spirituality and alchemy, Celtic and tribal tattoos, illustrations of the human body, fauna and flora, were combined and brought forth by an event, which the author posits as *the trigger*.

3.2 Trigger

Every art project has a trigger, an internal (from a neuropsychological perspective) or external (driven by outer stimuli) event, or a combination of both. The trigger creates or manifests connections between inspiration and reason, channels them and drives the artist into creation.

The trigger may not always be immediately recognised as such, as its role is to manifest dormant inspiration(s), to energize and kick-start the artist's creative potential, to produce intention. The trigger may only become apparent in retrospect, after research and reverberation occur. A trigger can be potentiated by motivation, making it more or less impactful.

In the present instantiation, the art project was triggered by two episodes in the author's life:

1. Watching real-time images of his heart during an echocardiogram. This was a life changing moment: while staring at something that was a part of himself – in fact such an important part that it is responsible for keeping him alive to this day – the author was struck by the realization that this particular organ appeared to have a life of its own, not subject to will or decision. He felt as though he was

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[1] The Principium series can be seen here:
https://pedroveiga.com/category/art/principium/artworks/ [2019-05-29]
[2] P.A. da Veiga (2016), *Principium*, ISBN 978-136-67693-3-6 and 978-136-67693-2-9.

[3] As an example, Andreas Vesalius (1543), *De corporis humani fabrica libri septem* https://www.nlm.nih.gov/exhibition/historicalanatomies/vesalius_home.html [2019-05-29]

meeting a beautiful, complex and mysterious old friend who had remained hidden and unseen for nearly half a century.

2. Shortly after the first episode the author was asked to sign a form of consent to amputate his mother's left leg, leading to the subsequent disposal of the amputated limb as biological hazard waste. This brought about comparisons of the extreme care that is taken with the dead human body, even leading to visitation and reverence; and how disposable and expendable – even dangerous – seem to be the parts of our living body that are surgically or otherwise extracted or removed during our lifetime.

These episodes were contrasted with two common contemporary visions of the human body: (i) the polished, gym-toned, diet-shaped human body, abundantly exhibited on Instagram [20]; and (ii) the gore and horror associated to the exposure of its insides [21], causing warnings of *graphic content* to be displayed over images of surgeries, medical procedures, etc.

The previous sequence of events was thus potentiated by the additional motivation of questioning the *status quo*, and led to the following question: should we not revere the parts of our living body, of its inside, as the beautiful, complex and mysterious friends that they are, who collaborate to keep us alive, even more than we revere the dead body, without feelings of horror or disgust, inculcated by biological dystopias perpetuated by horror and gore in literature and cinematography?

The trigger is thus the moment when the a/r/cographer formulates the research question, which will then determine a research hypothesis, or intention.

3.3 Intention

A black circle on a white background can be a representation of the moon, a tennis ball or the section of a cylinder. What it really is depends solely on the artist's intention.

> In the creative act, the artist goes from intention to realization through a chain of totally subjective reactions. His struggle towards the realization is a series of efforts, pains, satisfactions, refusals, decisions, which also cannot be fully self-conscious, at least on the aesthetic plane. The result of his struggle is a difference between the intention and its realization, a difference which the artist is not aware of [22].

The a/r/cographer's intention is complex, and will act as a guide through questions, systematic processes of information gathering, comparison, experimentation, contrast and interpretation, leading to deeper analysis, conceptualization and execution through iterative refinement, culminating in public exhibition and communication, and the eventual integral or partial repetition of the process.

Formulating the intention necessarily needs to consider that the project will have a particular intervention in a given universe (in academia, in the art world, in society), and it is important to carefully decide upon the quality of this intervention.

> There is no idea, however ancient and absurd, that is not capable of improving our knowledge. The whole

history of thought is absorbed into science and is used for improving every single theory. Nor is political interference rejected. It may be needed to overcome the chauvinism of science that resists alternatives to the status quo [23].

We have witnessed how, for example, the aesthetics of ugliness or of the grotesque have demonstrated the (however controversial) above statement to bear truth. There is a generalized and contemporary feeling that anything is possible and everything is admissible, especially in the art world, due to a culture that stimulates the freedom of individual expression. However, a large amount of that individual expression that is shown and shared online, especially through social media, paradoxically appears to lack individuality, and complies with a certain norm of either defunctionalized, or merely entertaining and decorative art.

One of the challenges of a/r/cography lies therefore in enabling its practitioners to self-assess their intention for their work and to seek innovation and the novel production of knowledge that it implicitly can foster.

To this effect the author posits a three-dimensional model of an intention/intervention space, shown on figure 4, flowing along three main axes:

1. Aesthetics, whose impacts vary from *boredom* or *indifference*, to *passion* – which includes both strong, passionate acceptance as well as committed, visceral rejection. Why this choice and not use *strong rejection* and *passionate acceptance* as limits instead? Because artists may seek deliberate, purposeful rejection, even repulse, as a statement. If artists succeed in creating a passionate response in the audience, whether it is a planned response of rejection or acceptance, then this is an accomplishment, as opposed to not evoking any reaction whatsoever.
2. Skill, concerning artistry, technique and research abilities alike, ranging from a *lack of mastery* to *skilful expertise*. It is important that the a/r/cographer brings the best possible skills to the project, his own or his team's, and guarantee that his intention is duly fulfilled at the intervention stage.
3. Function, which varies between *supporting* the *status quo*, even implicitly, by not challenging it or producing "more of the same" and, at the opposite extreme, its *disruption* through *challenge* and *innovation*. Removing *function* from art or, in other words, the aestheticization of art, implies "the violent annulation of its practical applicability and efficiency" [24].

This defines a centre point at the intersection of the axes in the three-dimensional space, with the proposed designation of the *OK* point. A negative positioning in all axes, below the *OK* point, represents a strong red flag for the a/r/cographer, since it indicates compliance (no innovation), indifference (no relevance) and ineptitude (lack of skills for the tasks).

When all values are positive, above the *OK* point, the project will be in a green zone, and considered ideal in terms of its a/r/cographical intervention, as its author will have delivered a

skilful art project that challenges society in a passionate way, through art practice, research and communication.

The red and green zones are shown on figure 5. Combinations of positive and negative values in the different axes, distributed along the remaining quadrants, may come across as acceptable.
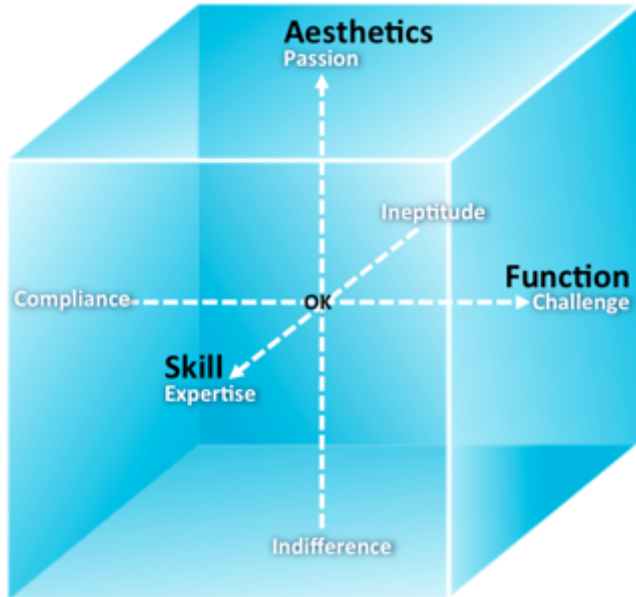

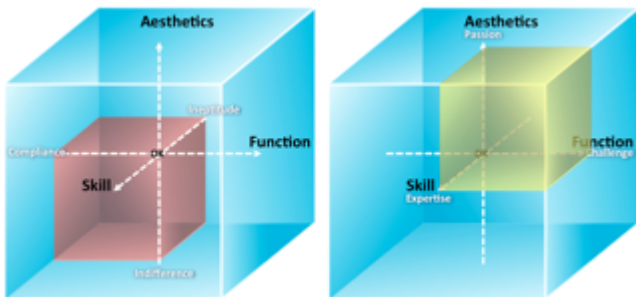**Figure 4: The a/r/cography three-dimensional space of intention/intervention and its axes.**

Figure 5: The "red" zone of compliance, ineptitude and indifference, and the green zone of challenge, expertise and passion.

In a/r/cography, the intention coincides with the research hypothesis and is formulated upon the previously triggered research question. The intention sets in motion all the ensuing steps: conceptualization, prototyping, intervention and revisiting all previous steps until one or more satisfactory results are achieved, whilst keeping documental track of the whole process.

In the present instantiation, the artist's intention was to create a transcendental bridge between the world of the dead, as most anatomical illustrations depict bodies in anatomical theatres during autopsies, and the world of the living, in such a way that it celebrated the many depths and planes of existence of the human being and body.

This intention was surprisingly mirrored on an Edvard Munch's quote, which became a motto of sorts for the project: "From my rotting body, flowers shall grow and I am in them and that is eternity" [25]. The transformation from death to life appealed to the sense of wonder, to metaphysics, to transitional states of matter and mind, and thus the art concept began taking shape.

3.4 Conceptualization

Once the intention becomes clear, the a/r/cographer can lay claim to a concept, which is but a vision of where the intention will lead, a conceptual prototype of the finished work. To help manifest the concept the a/r/cographer will gather different inspiration sources and correlate them through research and experimentation.

It is important to stress that due to a/r/cography's iterative and generative nature, the concept may only appear in its final form after research, experimentation and filtration, a process during which the a/r/cographer will discard some outcomes (eventually keeping some of the discarded combinations as inspiration for other projects), validate the project's feasibility, thus leading to an initial written formulation of the concept.

One possible conclusion to this stage is that the concept is not mature enough or not feasible, and in this case the inspiration will return to its dormancy, waiting for a transformative trigger at a later moment.

The concept behind Principium was one of multi-level transformation or alchemy: transforming the dead body into living rapture, transforming materiality into metaphysics, transforming time itself through the remix and surreal digital collages of anachronistic elements. The fact that a dead language (Latin) was chosen for naming the artworks provided further contrast with state-of-the-art high-speed photographic images of moving water and digital effects, with tattoos covering both the outside and the inside of the human body. All eras gathered in one image, representing Munch's eternity.

3.5 Prototyping

Once the concept takes an initial shape, the a/r/cographer delves into a first block of intertwined, looping and mutually influencing processes of design, execution and assessment – or prototyping. This stage is developed mainly through research, experimentation and hermeneutic phenomenological interpretation, and its intertwined processes are:

1. Research
2. Experimentation
3. Reverberation
4. Filtration

This allows for the a/r/cographer's concept to be confirmed or adjusted with the incorporation of new knowledge (through

open-scope research) and by test and analysis of initial trials (through experimentation and reverberation).

The goal of research at this stage is to not only determine if similar projects have been tackled by other authors/artists (a state-of-the-art study, of sorts), therefore ascertaining one's own originality, but also to further explore variations, alternatives, detours that may contribute to refine, enrich and enhance the project.

The a/r/cographer will then reverberate over the findings, hence generating feedback processes that may lead to further research and experimentation, potentially leading to adjustments of the concept itself. These cycles will eventually have different outcomes, and through filtration the a/r/cographer will sort them out into three categories:

1. Suitable outcomes for the project, which will then be incorporated either in the artefact(s), in the supporting theory or communication.
2. Outcomes that do not fit within the current project, but have some level of interest, and in this case should be documented and kept for further exploration at a different stage, thus becoming a dormant inspiration for another project, as could be expected from the generative nature of a/r/cography.
3. Unsuitable outcomes for the current project, and for any other potential project, because they fall out of the a/r/cographer's aesthetic or scientific scope of interest, and will therefore be discarded.

All these processes tend to occur in an intimate, secluded team environment, since uncontrolled external feedback at this point might have adverse effects, often causing either the still fragile relationship between creator and creation to quiver and break or the triggering of rash, protective responses from the creator.

This is also the time when the a/r/cographers will strengthen their confidence through research, gaining substantial core and peripheral knowledge, which will enrich all future communication. On the aesthetic plane, this gain in confidence is translated into the successful convergence and cohesion between concept, method and outcome.

During the research for Principium, the author came across a plethora of digitised historical medical and anatomical compendia in various European and American universities, which allowed him to gather a collection of nearly six hundred anatomical drawings from the 14th to the 19th centuries, in different styles according to an Arabic, Oriental or European school of influence.

Information regarding non-European illustrations was mostly incomplete, and in the majority of cases without a reference to the author. The understanding of the accompanying text (in the original languages) proved to be an invincible task for a layman in the fields of History, Medicine and non-European languages, and thus filtration naturally occurred henceforth: the author decided to dedicate his attention to illustrations from American and European compendia only.

The first pieces that were produced in the Principium series were clearly of a more exploratory, less cohesive nature than the later artworks, as a growing convergence was iteratively reached over methodological repetition and refinement.

Peripheral findings included answers to several questions that only arose during and because of the research itself. Some of these questions may now come across as trivia, but they have one important function, which is to help solidify the project by empowering the artist with deeper knowledge of the subject and its periphery, and are a good example of the *arc* metaphor in action.

Examples:

1. Why are there no records of earlier European anatomical illustrations than the 14th century? The answer is complex and involves a combination of the emergence of rival Greek schools of thought in the 3rd century BC, the burning of Alexandria in 389 AD, followed by the widespread introduction of Christianity in Europe during the Middle Ages. During this period, human dissection was considered to be blasphemous and so was prohibited through religious canons such as 1163's *Ecclesia abhorret a sanguine* or 1299's *De sepolturis*. The first officially sanctioned systemic human dissection since Herophilus and Erasistratus, was performed in public display by Mondino de Liuzzi, in Bologna, Italy, by Papal authorization [26].
2. Why were most anatomical illustrations of male bodies? Again a complex deduction, based on the classic influence of depicting heroes and saints[4] – most of whom were male – and at a later stage probably because the sourcing of bodies became the subject of legislation (for example, in the U.K the 1752 Murder Act and the 1832 Anatomy Act, in the USA the 1885 Illinois Cadaver Act), allowing unclaimed bodies in hospitals, from indigents or convicts, whose burial expenses were to be supported by the government, to be used in medical research. Convicts who died while incarcerated were predominantly male [27]. Reinforcing this idea, and with similar national legislation since 1913, the Portuguese Ministry of Work and Social Security states that in 2009 84% of the homeless were male[5].

3.6 Testing

After private execution the a/r/cographers reach a point at which they feel ready to share their work and collect input from external sources: friends, family members, academic and artistic peers. This stage is fairly similar to the previous prototyping stage, except for the preparedness of the a/r/cographers and the maturity of the project. External feedback can then positively influence the project and strengthen the a/r/cographers' confidence in their work.

This stage consists of the same processes that were previously active, complemented by *public presentation* and *audience feedback,* which are the most relevant processes at this stage. Feedback on the artwork can essentially be collected by three methods: (i) through the inclusion of mechanisms

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[4] Compare the total number of female saints (784) with the number of saints whose names begin with "A" (894) https://www.catholic.org/saints/ [2019-05-29]

(programming and/or sensors) in the artwork itself, aimed at registering attention grabbing factors, number of interactions, time spent engaging with artefact, whether per user or per session; (ii) by polling and statistical analysis, or (iii) semi-structured interviews with audience members. Once the audience feedback is collected and analysed, changes will be introduced and experimented in the artwork.

1. Research
2. Experimentation
3. Reverberation
4. Public presentation
5. Audience feedback
6. Filtration

Testing can also occur via social media, as the a/r/cographers decide to exhibit the artefacts to friends and followers, engage in discussions or simply measure online reactions.

Once the a/r/cographers feel confident enough in their public prototypes, they are ready to move on to the next stage: intervention.

3.7 Intervention

This is a goal stage in an a/r/cography project, as it represents the official public exhibition and communication of the project. But it may not be a final stage as its development can cause the a/r/cographer to revisit previous stages and decide to implement and incorporate changes, thus arriving at a later different intervention stage – which is only expected and natural, due to the generative nature of the present methodology.

This stage comprises three sub-processes, related to each role of the a/c/ographer, and two inherited processes from previous stages:

1. Exhibition
2. Cataloguing
3. Communication
4. Audience feedback
5. Filtration

As expected, each of the first three sub-processes is related to one of the main activities in a/r/cography: the artist prepares and plans the exhibition of the artwork; the researcher organizes and classifies media, retrieved bibliography and (self) produced written documentation – metadata, articles, chapters, books – for further use; and the communicator prepares and delivers the presentation of the project's conclusions and findings in their written format or as oral and multimedia presentations in seminars, conferences, talks, etc. But in all of these activities the a/r/cographer will still be willing to collect and analyse audience feedback and incorporate that feedback into the project, so that

each new intervention will potentially result in a more refined artwork/project.

The word *intervention* is not innocent, and is closely tied to the impact the a/r/cographers intend, by delivering onto the world the outcomes of their labour – artefacts, written documentation, catalogued media and information, and exhibitions. This intervention constitutes the thesis, as it validates the hypothesis, i.e. the intention, therefore it uses the same three-dimensional space that was presented in 3.3, along the axes of *Aesthetics*, *Skill* and *Function*.

Principium stemmed three individual exhibitions and one group exhibition, one book, two presentations in seminars and the classification and organization of over 1000 media files and articles, so they can easily be retrieved and reused.

At each occurrence new developments took place – for example, the book was only produced after the first two exhibitions, and the very last presentation in a seminar originated a new piece in the series of artworks, almost four years apart from the previous piece, as proof that the process could be repeated using the already collected media.

However the author no longer felt the urge to intervene on the subjects of the body, and chose to introduce formal and semantic changes. As a formal change, he moved from Latin to Greek to choose a name for the piece. As a semantic change he subtly infused several images of current social and political topics (deforestation, poverty, inequality, animal cruelty, violence...) as a cohesive background[6].

This last piece was – appropriately – called "*inspiration, research, information, action, creation, intervention, communication*" and although it follows the same exact process of composition as all the earlier pieces, its intention has changed, therefore so has its intervention.

4 Conclusions

One first conclusion is that a/r/cography fosters research and art-practice over a non-linear, systemic inter- or even transdisciplinary network of knowledge, not just because of the multitude of roles typically found in digital media art projects, but most especially due to the nature of the research it involves and how exhibition and communication also affect that research.

This network behaves as a rhizome, where multiple connections are constantly being established, where origin, end, hierarchy and linear organization can be overridden by a game of interdependencies, as depicted on figure 6.

All the flows on the diagram are bidirectional except for two outgoing flows, leading to *trash* and *inspiration* (for other projects). As even the supposed point of origin (inspiration) can derive from another project, mutual influences will inevitably occur between apparently independent projects, especially with shared authors.

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5   https://expresso.pt/actualidade/sem-abrigo-maioria-sao-homens-entre-30-e-49-anos=f640455 [2019-05-29]

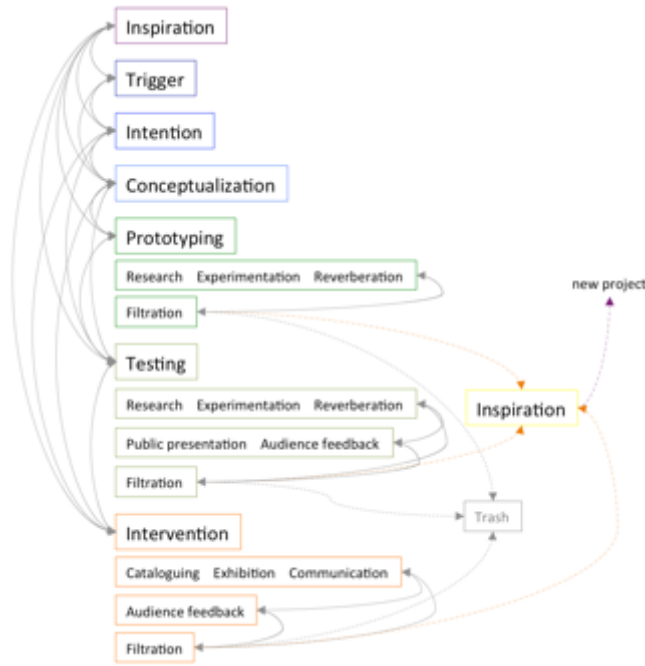6 The piece can be seen here: https://pedroveiga.com/ultimo-principium/ [29-05-2019]

Figure 6: A stem of the a/r/cography rhizome. Source: author.

The second important conclusion is that ultimately the appropriate recording and cataloguing of the research, creation and communication processes and flows, with all their contextual information, is just as important as the artworks, articles, chapters and books, since all are considered as objects of creation.

In this light, the author posits a/r/cography as a suitable methodology for the pursuit of the following goals:

1. To regard artworks, art practice and research as functional, interventional communication tools.
2. To develop suitable methods for modelling, prototyping, evaluating, exhibiting, presenting, discussing and disseminating digital media artworks and their associated research and communication.
3. To understand the interdisciplinary connections of digital media art to its individual, social, historical, educational, political, economical, technological and cultural contexts.
4. To work within the inter- and transdisciplinary potential of digital art in its contexts, in order to foster and promote relevant and impactful artistic interventions.
5. To create knowledge that may prove useful in current and future a/r/cographic practice, both by the respective authors and third parties alike.
6. To constantly (self) question the role of the a/r/cographer in the arts ecosystem, aiming at its growing adaptation and relevance.

A/r/cography is thus a valid expansion of a/r/tography, consisting of a creative research methodology particularly aimed at new media and digital art. It is developed over an interactive, open communication system with dynamic characteristics that enable the practitioner to articulate relationships across disciplines, through contexts, narratives, memories, dialogues, meetings and groups, and develop adequate communication.

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