PEER-REVIEWED ARTICLE

DANCING SOMEONE ELSE'S MOVEMENTS THROUGH SOMEONE ELSE'S BODY: THE PROCESS OF COMMODIFICATION OF THE DIGITAL DANCING BODY AND THE ARISING TENSIONS WITH INTELLECTUAL PROPERTY REGIMES

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ABSTRACT

In this article, we will describe the uneven conditions in which dance practices are being extracted and circulated by looking at how online gaming platforms have digitised and commodified human movement. The study of these controversial cases contextualised within the legal aspects of dance copyright are the basis to offer speculative courses for both dance practitioners. The first section explores the issues of digitisation and ownership of bodily movement within virtual spaces by looking at notions of disembodiment and dance as a commodifiable object. The second section illustrates the complexities of copyrighting choreography through a critique on how intellectual property regimes disregard collective and social practices. Finally, we will present alternatives for dance practitioners going forward by looking at how to protect dance as a digital object; the current initiatives to engage dancers with technological affordances; and the decentralising potential of blockchain networks to build new collaborative landscapes for the circulation of creativity.

Keywords: *Blockchain, choreography, commodification, dance-media, intellectual property, motion capture*.

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The current circulation of dances across digital spaces, or better said of images of people dancing, is heightening the necessity to think about dance beyond the mere execution of steps. The neurological or psychological reasoning behind the millions of hits and reposts of videos of people dancing across TikTok and social media is outside the scope of this paper. Instead, the aim will be to register, interpolate and consolidate the points of tension that these virtual experiences of dance are posing for the enforcement of conventional Intellectual Property Regimes (IPR). Even though these iterations of dance, mediated by communication technologies, can arguably be seen as even more fleeting than those seen on a stage or a party, the truth is that the traceable and palpable outcomes of people moving with the assistance of their cell phones or virtual avatars are as entertaining as they are troublesome. Hence, this article will describe the experience of dance within the virtuality as a fulfilled commodity to then, start to map out the points of tension with intellectual property laws and finalise with several alternatives that outline how new technologies can protect dance in the near future.

How did we get here?

As a result of the COVID-19 lock-down in April 2020, *Fortnite* began hosting live music events on the game's *Party Royale Island*. The stage hosted musicians such as Travis Scott, Steve Aoki, and Deadmau5. The footage or screen recordings of these events are reminiscent of a scene from Francis Ford Coppola's film *Apocalypse Now* (1979) where a group of *Playboy* dancers put on a show for American troops stationed in Vietnam. During these events, players' avatars gather in sparse formations moving through a series of coded dances on the battlefield. Simultaneously, the game provided a bright and colourful veneer for the not-so-glamorous battlefields; the homes and bedrooms from where users connected. Without a physical space to unite the material bodies, gaming companies that produce avatars attained a monopoly on shared "bodily" experiences during the times of the pandemics. This first section deals with the concern about the degree of commodification and ownership of bodily movement within digital spaces by looking at notions of property, disembodiment, and dance as a commodity.

The amusing scene described above is not the first digital milieu of strange sociability and dance produced by *Fortnite*, the most successful video game in history (Fitzgerald, 2018), which was already popularised for allowing avatars to perform recognisable sequences of human movement, called *Emotes*. The company behind the software, whose revenues surprisingly ascended to $318 million U.S. dollars only for the month of May 2018 (Kain, 2018), recently faced four lawsuits in the United States. The reason alleged was the unauthorised use of kinetic material included in the game's Emotes. Four plaintiffs claimed to be the authors of some of these short capsules of movement granted as prizes if the users spent enough time playing or were willing to pay for them. All of the plaintiffs recognised the movements danced by the digital avatars in the video game because at first sight, they seemed identical to their dance steps. This dystopian panorama drew attention from the media for its previously unknown conditions and for the apparent impossibility of intellectual property regimes (IPR)[1] to grant plaintiffs any kind of protection. These cases will be examined in the following paragraphs, but

for now, it is important to highlight that the variety of dance movements included in the game, ranging from contemporary pop to traditional folklore, might still unfold more controversies in the future because of unattributed and unpaid authors. This dynamic of non-consented, non-compensated usage of expressions of knowledge-in-action has been a known outcry made by indigenous peoples and minority groups for the last century (Frankel, 2014; Kraut, 2011; Murphy, 2007; Torsen & Anderson, 2010; Tsosie, 2002), even before the conditions for the digitisation of the dances and the commodification of the dancing body were available. Nonetheless, what is being described here is a more pervasive iteration executed through state-of-the-art motion capture technology which foregrounds and enlarges the difficulties already existing between dance and ownership. Facilitated by new technological tools, the kinetic content of choreographers and communities become available on the World Wide Web for the general public to appreciate, purchase and collect. But within this virtual atmosphere, whose rights should be regarded while recording and reproducing dances under these unprecedented conditions? What is it that is being misappropriated when a computer-created avatar is moving in a way that resembles a previously known dance?

To start dissecting these questions, we must first address the notions underlying the rights that are claimed to be affected. Property is the consequence of ownership; it is a transferable possession able to exist separately from its creator or manufacturer. For property to be transferable it must be materialised to a certain extent, this is what is known in conventional IPR as "fixation". If an intangible creative expression is being dealt with, it must exist in a material form; a score, book, script or record to be protected as intellectual property (Boateng, 2011; Dommann, 2008; Kraut, 2009; Swiderska 2006). Whether we are looking at the results of mass production processes or creative expressions, it is clear that the labour can be estranged from the product in its fixed version. Yet, it is difficult to think of the choreographic in terms of property, as the act of dancing is both product and service. For dance to become palpable, it always requires the service of dancing. In this sense, it can never be a fully materialised commodity – at least not until now. But even if we are focusing within the current context of insertion of the body in the digital space, the question of the actual possibility of separating such "bodies" from what they "do", still remains, as exemplified through the legal controversy raised by the plaintiffs on the case of dancing avatars in Fortnite. However, this phenomenon cannot be understood unless attention is paid to the technological developments that made it possible.

The 2000's saw dance crazes surface through advertising and music videos while shared experiences were on the decline (Gill, 2017). With the widespread use of mp3 players, people could listen to music, imagine themselves dancing and go about their normal business. The infamous iPod commercials of the '00s depict this imaginary space perfectly. The first iPod commercial shows a man dancing in his apartment and as he leaves his house, he puts his headphones in and walks out the door as if he was not listening to music. Later versions display human silhouettes performing familiar dance moves with earphones attached to the iPod accompanying the silhouettes, giving a feeling as though the body is dancing in a meta-space. The advertisement

simultaneously situates the dancers in a non-place, suggesting dance can be a private and mental activity instead of something physically shared with others. This narrative on the disembodiment of dance is interesting to recover precisely because it involves the engagement of a new technology that alters the notions of our own physicality, but this was just the beginning.

With the aid of pervasive media, dance can now exist on the screens of our phones – it is able to exist in a palpable way. Here we are not dancing, but possessing and consuming images of ourselves and others dancing within our hand-held devices. To experience dance, we no longer must rely on attending a performance or a party. For example, TikTok connects people dancing inside their homes, providing users with filters that place computer-generated people in the shot to give the effect of a social event taking place. Dance in this form is always at our disposal – an arm's reach from our pockets or bags and not confined to being in a body anymore. This type of digitisation of the body, however, does not yet complete the separation of labour and product regarding dance. Instead, it is the rise and dissemination of motion capture technologies that allow for human movement to be extracted for the use of moving images and video games. Motion capture is the encompassing term to describe several computational methods "that in some way track and record the body and its motion in space over time" (Jensenius, 2014, p. 2). These tools are used to make computer-generated characters more believable, as the dynamics of human movement are difficult to recreate without a physical body. By using motion capture, any series of movements can be recorded, extracted, and transferred with high detail, inaugurating the substantial separation of labour and product that was required for dance to finally become a fully commodified object. Nonetheless, if the creator of a choreographic work is not versed in the technology and economy that allows movement to become a form of property, this can pose a practical interruption in the relationship between author and product. However, this does not prevent those who do have the literacy and resources from digitising and profiting from such creations, as unethical as it might be.

No longer an inalienable commodity, dances can be bought in virtual online markets to be performed by avatars to communicate and experience the worlds of online gaming. However, the authors of these bodily practices are commonly not comfortable with nor aware of the consequences of having their movements disseminated at such a large scale. A prominent example of this is the use of dance material in the referred video game Fortnite. *Fortnite Battle Royale* is based on the 2000 cult film *Battle Royale* directed by Kinji Fukasaku. The premise of both the game and film is that a group of people is left on a desert island with a mission to kill everyone and be the last person standing. In the game version, players are able to personalise their characters, giving players options to make in-game purchases of costumes, skins, and Emotes in exchange for *V-bucks*. 1,000 V-bucks equates to £7.99 and players may earn in-game currency through playing the game or can purchase it with real-life money. Emotes are short dance sequences or a single gesture that can be used to – as Fortnite used to call it – "express yourself on the battlefield" or celebrate a victory after defeating an opponent. The majority of these Emotes cost around 500 V-bucks, therefore one can own a dance to be performed by

one's character for £3.99. Emotes can act as a way to communicate with other players online to form allegiances, or act as bait against enemies. The sequences offered in the game are either direct replicas or based on popular and traditional dances/moves (Goslin, 2019). Except for a couple of steps, Fortnite has renamed these dance moves and does not credit the creators, continuing to alienate the works from their authors. This is how games like Fortnite make their profit, it is through the various add-ons that players can personalise and customise their avatar. The dances, therefore, become an item to be owned, although not necessarily by their creators.

Furthermore, the choreographic material available on the gaming platform is not created by the company behind it, Epic Games. The first versions of the game saw dances copied from the internet, TV, and music video sensations. *Fortnite's* developers were taken to court by dancers, musicians, and actors for the use and renaming of their work.[2] The plaintiffs lost their cases for not copyrighting their work beforehand because the choreographic phrases were considered too short. This is due to The U.S. Supreme Court ruling in the case Fourth Estate v. Wall-Street.com which imposed the need to have a copyright registration at the Copyrights Office before any copyright infringement claim can be made in Court, which is something that none of the dancers had before suing Epic Games. After these court cases, Fortnite adopted new modes of generating choreography. Instead of working alongside choreographers or dance makers, they used YouTube and TikTok as production lines. They did this by using the dance challenges phenomenon popularised on TikTok. Winners were awarded their dance being turned into an Emote as well as in-game currency which cannot be exchanged into real-life currency. It is here that the choreographer became the labourer as opposed to the artist, alienated from the products they create. Dance challenges become assembly lines for products that later allow users to "express themselves on the battlefield", but always through someone else's body and movements that someone else created.

Retribution through fictional money, paying for dances that others invented, or having one's movements extracted and digitally reproduced are some of the consequences of these new technologies that are challenging the notions of intellectual property regimes as well as of property in itself. Without the right to profit from one's creation or decide the conditions for its circulation, what is the meaning of owning a dance? Who can be considered as an author and potential owner of a cultural product appears, at a first glance, as a clear consequence of producing a work of intellectual value. Nonetheless, the connection between people and their creation is not always drawn, as seen with the dismissal of property rights in the four lawsuits against Fortnite and its Emotes. To be recognised as an author, and later, as the owner of a dance it is not enough to have created a set of movements, as it has been proved. The digitisation of the body and the commodification of dance is further enlarging the difficulties regarding attribution and circulation for dancers or choreographers over their own creations.

The iteration of the same problem under a different environment

The question of authorship, as fundamental as it is, is not the only one amidst the discussions about why IPR are not effective at recognizing the rights of the people who claim to be the inventors of the dance steps included as Emotes in Fortnite. This is clear when we consider that many popular dances, still undisputed, were freely included in the same software without the enforceable obligation to retribute or attribute any community or group of practitioners. The use of collectively made choreographic phrases in such games further complicates issues concerning retribution and attribution "as conventionally conceived [collective dances] are created and maintained by communities of anonymous producers" (Kraut, 2009, p. 77). This precise quality is at odds with one of the basic requirements of IPR, namely, the need to have identifiable authors behind any product that is intended to be protected. It follows that everything that is produced under collective dynamics is doomed to become part of the public domain, and therefore, open for others to use and profit from. However, these basic requirements for adequate protection are underpinned by Western narratives.

> From (...) Linux operating system to Native American folklore, our system struggles to assign intellectual property rights to authors who fail to evoke the Romantic image of the solitary artist scribbling away in an unheated garret or the unkempt scientist waking from a fitful nap on a cot in the laboratory with a sudden flash of insight. (Scafidi, 2001, p. 795)

Susan Scafidi and other sources (Burri, 2018; Gervais, 2003) have linked such romantic notions of authorship within Western imagery and epistemology; therefore unsuitable for describing the conditions of production and practice of social, folk or indigenous dances. This romantic imagery about the way people create and invent has certainly not been affected by the current hordes of young users dancing online in front of their smartphones. This networked creative activity is challenging the interconnections between practice, authorship and attribution in a way that resembles the collective experience of traditional peoples.

> Each discovery should not only be situated and dated but should also be attributed to someone; it should have an inventor and someone responsible for it. General or collective phenomena on the other hand, those which by definition can't be "attributed", are normally devalued: they are still traditionally described through words like "tradition", "mentality", "modes"; and one lets them play the negative role of a brake in relation to the "originality" of the inventor. (Chomsky & Foucault, 1971, p. 16)

A tangent is yet to be drawn between these descriptions of collectively held traditions and the current situation of viral dances flooding the internet, which are not necessarily produced within "traditional" settings but are collectively produced as "an infinite number of incremental and evolutionary adaptations, imitations, revitalisations, revivals and recreations" (IGC, 2018, p. 4). In addition, the unfair treatment that the current IPR are giving to collective, traditional, and orally transmitted dances calls for urgent alliances between different sectors to achieve proper protection and avoid repeating, within digital spaces, the inequalities faced by marginalised groups in the past. This is

why literature that was produced with traditional cultures in mind, becomes suitable to understand the struggle to protect collective digital creativity:

> By construing (the creative works of marginalised people) as mere folk tales, intellectual property law has allowed dominant culture to plunder the traditions and forms of African Americans and other minority groups. Assigning folk forms to the "public domain" has effectively given artists with greater access to the means of production license to mine and capitalise on those forms for their own creative endeavours. As a result, intellectual property laws have consistently favoured those white individuals who wrote down, composed, drew, or marketed the story over those African American individuals who lived or experienced it. (Schur, 2009, cited in Kraut, 2010, para. 175)

Even if a post-structuralist approach to "authorship" is employed, the way in which this notion has been applied or denied for dance practitioners, members of minority groups, cannot be overlooked. The moral rights deriving from owning something are also accompanied by economic, legal, and social capitals that either reinforce or revoke the systematic inequalities already in place. Along with these considerations of the "same problem" that marginalised peoples have been experiencing for protecting their creativity, as referred to in the title of this section, special attention must be put on the new conditions of this digital iteration. The increased reach, speed, and pervasiveness of the circulation of cultural practices in the digital sphere, has fundamentally morphed how dance is being conveyed, which represents an important departure from the controversies of authorship that occurred under "real world" conditions. Previously, Anthea Kraut (2008) in her paper "Whose choreography?..." noted that the social hierarchies implicit in authorship issues for the performing arts, could effectively be circumvented by displacing the "locus of creation" to the bodies of the performers, allowing the possibility for marginalised, gendered or racialised bodies of practitioners to "(re)interpret the historically male composer or choreographer's part" (para. 9). Now that avatars are the digital bodies performing, and that the pre-established movement sequences are invariable, as in the Emotes, this degree of agency has been interrupted along with its entailing possibility to improvise, disrupt, command attention and "translate it into recognition, and … monetary capital" (Kraut, 2008, para. 10).

Consequently, to discover the kind of redefinition of authorship in dance that could be afforded by new technologies of human movement recognition, these tools need to be further studied. By offering new ways to visualise the labour of dancers, motion capture technology also holds the potential to reveal with detail, the embodied knowledge, the kinetic substance, and the rhythmic structure underlying any dance. At the same time, motion capture has been linked to the process of commodification of bodily practices and its further extraction and extrapolation. "The question is above all how the changed (and changing) digital environment influences ... and whether (and how) one could coherently and efficiently provide for the protection and promotion of TCE [Traditional Cultural Expressions] in this environment" (Burri, 2018, p. 226). Following such a statement and avoiding at all costs the premise of demonising technological development *per se*, in the next section we will explore potential applications that these

resources could have for creating a more egalitarian and fairer digital environment for the circulation of dance practices.

Where do we go from here?

As demonstrated in the example of the commodification and misuse of choreographic material in the game Fortnite, the function of current legal frameworks for protecting dance are now more than ever, thrown into question. The next section of this article will dive into speculative and prospective thinking to raise alternative paths that dance practitioners can turn to in the efforts of protecting and preserving their work, turning the potential of new technologies to their own benefit. The three conjectures below work within the constraints of the conventional premises of international IPR instead of rethinking ownership without any legal consideration. These proposals are complementary and somehow subsidiary of the need for a new set of protocols for protecting dance, especially when sold for cash value as seen in the case of the hit title developed by Epic Games. The technological developments required to put these suggestions into action have yet to be harnessed, however, they have come a long way from being the inaccessible tools that once only research labs could dream of, as the following initiatives will illustrate[3]. Here, we highlight that the introduction of the dancing avatar as a commercial product requires researchers to rethink the ways in which dance can be assessed, approached, and protected when involving digitisation of practices danced by digital bodies.

Dance as code

When considering the tangibilisation of a cultural product, the medium that allows us to fix it is a crucial aspect to understand the dynamics of its protection. Monika Dommann (2008) previously noted that after 1900, "the rise of recording technologies fundamentally changed the structure of trade in music" (p. 7); the availability of phonograms changed the way in which copyright registration was processed for musical compositions. According to Kraut (2009), a parallel situation can be traced for the case of dance, which in 1952 was able to be copyrighted for the first time in the U.S. thanks to the systematisation and order of the Labanotated score attached by Hanya Holm for her solicitude of registration of the choreography *Kiss me, Kate*. With dance in the digital sphere, it is important to consider how a computer reads, processes, and archives choreography as pieces of information. In this sense, we must re-conceptualise the framework of a score – moving away from its purpose of communication exclusively amongst humans and towards new human-computer interactions. To do this would not require the services of a conlanger, as beneath the inner workings of motion capture technology there is a language readily available[4]. The positioned coordinates produced by the recording of human movement through motion capture technology, appealing for their high degree of detail, could unexpectedly become a suitable strategy for dance practitioners to gain ownership of their work, not as movement but rather as a new digitally produced object.

To begin with, it may be helpful to compare an analogue communicative score – Labanotation – to this article's proposition of a fellow computerised coded score. The purpose of Labanotation is to be read by a human so that movements may be reconstructed by another. Its qualities, however, offer some sort of precursor to motion capture data; it attempts to transcribe kinaesthetics into a readable script. Like the three-stave system of Labanotation; motion capture coordinates consist of positions translatable to numbers on the X, Y and Z axis. While Labanotation uses the human as a centre, motion capture coordinates integrate both the body coordinates as well as its environmental coordinates, allowing the software to track the body's displacement. Even though Labanotation incorporates notions of rhythm and dynamics; motion capture provides the use of space and body to allow for a different precision in the record. For the remainder of this section, motion capture data will be referred to as MCD.

While MCD could potentially be derived from a set of coordinates and more accurate than the previous Labanotion, its practical uses would be limited as the result would be coded in such a way that it would be nearly impossible for a non-specialised person to read it, let alone recreate it. Nevertheless, if motion capture technology affords to translate human movements into code, a new possibility arises. Dance translated into code may be protected under the same copyright laws which protect source code. In this way, once movements are captured into code, they become fixed in an innovative but still tangible medium of expression, inaugurating the possibility for the creators to be granted copyright protection over the newly created digital data. The same limitation that applies to source code copyright, it should be stated, would also apply to MCD. Specifically, that:

> Copyright protection [for code] does not prohibit other expressions of the same idea. As an extreme case, identical works created completely independently do not infringe the others' copyright. Further, copyright law has some built-in exceptions that allow other people to use copyrighted materials without the consent of the copyright owner. (Lindberg, 2008, para. 24)

Though MCD when considered as copyrightable material may not protect the dancer's authorship completely, this mapping of source code to copyright law helps gain valuable insight on the digitisation of movement. Holding motion capture data by itself could only function as an advanced method to render a dance practice, but when coupled with tokenisation on the blockchain, it could become a "defensive" strategy to prove the existence of the dance in a particular moment, that is, to prevent third parties from gaining ownership over the same expression. To reiterate, this proposition is not to solve all the previous problems with copyrighting embodied dance as these issues should be considered separate from the commodification of dance in digital bodies. By copyrighting a dance's MCD it would at the very least eradicate dance being directly copied digitally. Should the movement be reproduced separately elsewhere, the copyright of the MCD of a dance may not be infringed upon, however, producing MCD does help to draw a line between the creation and the dancer, or a group of practitioners, which feeds into the necessity to establish the authorship of

creative products. It is important to consider in addition, that utilising copyright in the proposed way, may enact a system based on access to expensive digitisation methods for dancers. This could be described in other words as creating a *de facto* barrier between those who can afford to copyright movement through motion capture, and those who cannot. An example of this is how Fortnite was able to codify movement for their Emotes and proceed to monetise these movements taken from other dancers who have not undergone the correct channels for copyrighting their movement nor digitising it.

Taking the model of source code copyright and applying it to code created through motion capture, we see how copyright may provide some protection to dancers and potentially assist in establishing their authorship. This method could be explored to overcome the limitation that the four plaintiffs against Fortnite experienced since the reason why they could not copyright their dance steps in advance was that the movements were too short to be considered a work worthy of protection. Although a permanent reflection between the balance of privatising creativity and the benefit of the public domain should always remain present, it would be interesting to know if the Copyrights Office in the U.S. would have considered these creations innovative enough if they were presented as a compilation of motion capture data or code instead of as a "choreographic work". Notably, at the time of writing, access is affected by lack of common distribution networks, and technological accessibility through its literacy and affordability. In the next two sections, these issues will be further explored through ongoing projects such as "Embodying Reconciliation"[5] and blockchain-based technology, which are mitigating these problems to a certain extent.

Using motion capture for defensive protection and transmission of dances

Speaking about using new technologies to protect individual creators or communities of practitioners from having their dances misused is a fundamental issue involving power asymmetries and accessibility issues. The affordances that motion capture technologies have in terms of proficiently recording and rendering human movement need to be contrasted with the pragmatic possibility of people employing such developments in real life. Following the previous section wherein MCD is suggested as a potential option for practitioners to tangibilise their dances and eventually obtaining copyrights over them; we want to recover several experiences that are embracing this approach while tackling the digital divide. Below are examples of projects that seek to make digital structures user friendly and largely available, which feed into the discussion of the accessibility of these new technologies for general and non-specialised practitioners.

In the frameworks of the *Virtual Museum Bodies for Empathy*, endorsed by the Mayor's Office of the city of Bogotá, a group of professionals from the non-profit Embodying Reconciliation including the authors of this paper, have been developing throughout 2020, a motion capture platform available for any web-browser. The software can be used without expensive equipment, and it does not require anything else besides the camera of any device with an internet connection. This initiative is offering indigenous and contemporary dancers and practitioners across Colombia a new medium for the tangibilisation of their dances which is, as seen before, a standard requirement

for pursuing intellectual property rights or for establishing authorship as a defensive measure. Simultaneously, the endangered transmission of indigenous cultural expressions in action, which is further deepened by the current constraints of social isolation, can be somehow reverted through the creation of digital repositories of motion-captured dances that will be shortly available through the official website of this Museum. The motion capture platform hosts static and dynamic images of several dance practices of Colombia, and it offers feedback for users to adjust their movements to match the references.

Several other initiatives have been launched to preserve and safeguard traditional dances within digital environments. The use of new technologies in such projects is a strategy and a statement to move away from enclosed archives that cannot engage with larger audiences nor other platforms. Throughout the following experiences, there is a clear intention to allow users to learn dances in web-based environments or other interactive platforms mediated by computer technology. This stance becomes more relevant, due to the new horizon traced by COVID-19, which has, and will continue to change the conditions in which cultural products are displayed, performed, and taught, at least in the immediate future wherein new modes of transmission of corporeal practices are needed.

- *Terpsichore*[6]*. Transforming intangible folkloric performing arts into tangible choreographic digital objects* is a project committed to engaging larger audiences in the transmission of folk dances through computer-based tools. "Terpsichore aims to study, analyse, design, research, train, implement and validate an innovative framework for affordable digitisation, modelling, archiving, e-preservation and presentation of Intangible Cultural Heritage (ICH) content related to folk dances (Doulamis et al., 2017, p. 2). A relevant aspect of this venture is the interest to blend within the same web-based environment, choreographic examples along with oral elements previously recorded as well as external resources indexed from cultural libraries like *Europeana*, which decreases the failure to acknowledge the origin of the practices.
- *WebDANCE - Dance for all using e-learning tools* is an initiative carried with a strong pedagogical concern within the field of dance transmission, targeted for young people. Through several digital tools, including 3D animation of folk dances, the intention, according to the official website, is to offer a contribution towards standardising the efforts in dance e-education[7].
- The complementary layers of dance, as a multidimensional cultural product; visual, symbolic, oral, and choreographic, have been considered for the design of several preservation projects. One successful experience was seen with *i-Treasures Capturing the Intangible Cultural Heritage and Learning the Rare Know-How of Living Human Treasures*[8]. Trying to reach an ever-expanding repository, this initiative implemented an open-for-input type of platform that offers tools for content creators to increase the scope of the project to protect products along with processes. "Several folk dances have been recorded and educational game-like applications have been implemented for them" (Kico et al., 2018, p. 2).
- The European Funding Programme H2020 supported the creation of *AniAge:*

High Dimensional Heterogeneous Data based Animation Techniques for Southeast Asian Intangible Cultural Heritage Digital Content[9]. The underlying intention is to focus on the indigenous dances and folklore of the region, based on computer animation and visualisation expertise. Beyond the sole digitisation, the project aims to create a roadmap for larger audiences to engage with ICH through digital safeguarding. The preservation of Southeast Asian dances under this scheme has developed exciting outcomes, such as video games, 2D skeleton tracking data, image sequences as well as motion capture files for free download.

- Particular creative experimentations such as the *WhoLo Dance Project - Whole-body interaction learning for dance*, have shown that human movement recognition equipment and similarity algorithms can do more than meticulously record dances[10]. The system allows for novices to learn dances from a pool of data while getting real-time feedback from sensors. The latter are configured to determine if the student is accurately complying with the key postures established in the choreographic models (WhoLoDance, 2018, para. 1). To accomplish this juxtaposition of a physical and a virtual body, professional dancers were asked to perform their dances of expertise while being recorded using a motion capture suit. With the help of the same motion capture technology, apprentices could step inside the master's body to learn their movements while being evaluated by a set of similarity algorithms. Impressively, the designed system allows for participants to know how accurately they are reproducing the original movement patterns in real-time. "The engine can measure the similarity between dance performances modelled using movement features, i.e., numerical descriptors of the evolution of movement properties and qualities over time" (WhoLoDance, 2018, para. 1). Even though this technology-mediated method of transmission could raise concerns regarding the reinforcement of notions of virtuosity or reductionism of dancing practices to mere positions on a 3D plane, it still has a value to be acknowledged for the developments it implies in the digitisation of intangible practices, whose applications will be determined by users and creators.

Blockchain-based architectures

The reviewed experiences are to a certain extent, a response to the legal gaps internationally identified in the global forum of the Intergovernmental Committee on Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore of the World Intellectual Property Organisation (WIPO) regarding the protection of creativity and intellectual products of traditional origin. Institutionally speaking, for over 20 years now, WIPO, as well as the Permanent Forum of the United Nations for Indigenous Issues, have been dwelling on the impossibility to use intellectual property systems to establish the authorship and ownership of indigenous peoples over their intangible cultural heritage. After countless unfruitful discussions about how to adapt the Western-tailored tools of intellectual property for indigenous creativity, it is time to recognise that maybe this strategy was never the best course of action. Furthermore, this might be also the case even for dancers that belong to Western contexts, considering the arising challenges posited by the digitisation of the bodies and the commodification of dance practices as it was seen with the disappointing results of the four lawsuits against Fortnite.

At this point of convergence between the appearance of new technologies like blockchain and the recurrence of the struggle of dancers to claim and profit from their own intellectual creations, a new horizon could be traced, since "crisis points are of course the perfect moments to perceive the edges of any system" (Catlow et al., 2017, p. 11). Blockchain technology can be identified, according to Melanie Swan (2018, unpaginated) as: "software for secure cryptographic transfer of unique instances of value on the internet" although it has been more broadly recognised for establishing the basis for circulation of cryptocurrencies. This technology allows currency to circulate without the centralisation of banking entities and has been progressing to currently being implemented in other frameworks beyond financial structures such as art authentication and smart contracts. To create order within the cacophony of contradictory voices of the internet without authoritarianism or censorship, the horizontality, commonality, and mirror-like quality of blockchain technologies can become effective to create systems of attribution and agreement – "cryptographically anonymised, traceable, and immutably codified" (Catlow et al., 2017, p. 11). This in turn could be a substantial departure from the undisputed misappropriation of creativity in the form of different cultural and artistic expressions, including dance practices. The artworld is already engaging with the potential of blockchain technologies to circulate cultural products within digital spaces by creating imperishable and proof-of-hack certificates of authenticity as well as by introducing encrypted time stamps that serve as undeniable proof "that your digital file existed at a specific point in time" (WIPO, 2020, para. 1). Given that a lot of controversies regarding authorship and ownership of any intellectual product can be settled by recognising who did it first, the possibilities afforded by the blockchain are appealing for cultural creators and communities. This is precisely why the World Intellectual Property Organization is already engaging with this technology that allows for anyone to corroborate the existence of a cultural product, using tokens as programmable digital units of value confirming the date in which an object was first uploaded to the blockchain, as stated on the official website of the service:

> WIPO PROOF tokens can be used to establish prior existence, helping prevent misuse and misappropriation, and can be useful in safeguarding intellectual assets at every stage of development from concept to commercialisation, whether or not they eventually become formal IP rights. (WIPO, 2020, para. 7)

It should be noted that having a token does not equate to being granted ownership rights over a certain cultural product, nonetheless, it can assist in pursuing them in the future, or at the very least prevent third parties from illegitimately appropriating the "tokenised" object, by proving its prior existence. Either by establishing authorship or by redefining it, the blockchain is structurally set for opening new ways in which people engage with cultural products. Besides the issue of authentication, and thanks to the process of tokenisation, blockchain architectures allow for fractional ownership, which facilitates for a painting, a piece of code or a song, to be collectively owned. Several artists including Gordon Berger and Jonas Lund are already using the blockchain to allow their audiences to own a fraction of their works and have a say in the governance and administration of them, similar to having a share in a company

but even extended to creative decisions of the art pieces. This "innovation" ironically is very much aligned with the way in which indigenous communities hold and sustain their traditional knowledge systems, beyond individualism. Once again, we may have arrived at the same premise of collective ownership and livelihoods through radically different paths. This last note is crucial as the intention of this paper is not necessarily to advance the process of individual privatisation of culture through expanded application of intellectual property regimes, but rather to explore its limits and pursue alternative paths that might procure entire groups the benefit and ownership over expressions of creativity.

A preliminary closure

Individualistic expectations of authorship, exclusionary parameters for fixation, and Western-driven notions of innovation, were already identified as a barrier for indigenous communities to protect their works from misappropriation. Now that contemporary social and popular dances are being recorded and extracted for digitisation and profit within virtuality, the commodification of dance and movement has become a reality with unequal benefits for practitioners. The urgency to alter the way in which intellectual property regimes are constituted has yet to be translated into new parameters of protection that do not harm collectively owned systems of knowledge and cultures. These conditions are provoking for practitioners across disciplines and backgrounds to experience difficulties while being attributed and economically recognised for their works of dance within the ever-expanding digital sphere. The access to new technologies and the literacy in its uses are delimiting who has the upper hand within the unprecedented conditions that we are facing wherein video games such as Fortnite and other platforms can freely extract, circulate, and sell pieces of human movement.

Thinking past the public outcry of the cases of misappropriation of dances and culture, a crucial reflection of this article appeared after discovering historic moments when technical and technological advancements shaped and broadened the notions contained in the law and the perception of decision-makers regarding the protection of cultural products. The cases of the phonogram altering the way in which the protection of music was granted and Labanotation scores making possible the first copyright registration of a dance in the U.S., are only a few testaments of the significance of technology for altering notions of authorship and how it is protected. Similarly, the repercussions of new digital technologies are yet to impact the next generation of dancers engaged in virtuality. By engaging more people with such resources and tools, a broader set of interests can be reinscribed in the way that digital technologies are developed, instead of having them shaped only by a small unrepresentative group of technocrats and corporations that can easily turn the "digital revolution" into a sectarian monopoly. Far from vilifying any technological development, we have presented several strategies and alternatives that involve their usage to assist individual dancers and collective practitioners in protecting their creations and regain agency over them. While keeping in mind the limitations and shortcomings of intellectual property regimes, we have put the emphasis on the affordances of motion capture technology, digitisation, and blockchain-based architectures to re-configure the unethical ways in which dances are circulating within digital spaces.

The speculative future that the authors of this article envisage is one whereby movement-based practitioners hold greater agency in virtuality. Whether it be by dancers directly selling motion capture data to game makers, or dances being bought through blockchain networks to strengthen attribution and forge deeper connections between users and artists. This future must be imaginative and innovative as much as it is equitable; for the most ground-breaking and unprecedented technology that could be designed is that which encodes equity at its centre.

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NOTES

1 For this case, the Copyright Act of 1976, codified in Title 17 of the United States Code.

2 “Alfonso Ribeiro, “Orange Shirt Kid,” Terrence “2 Milly” Ferguson, James “BlocBoyJB” Baker, and Russell “Backpack Kid” Horning” (Goslin, 2019, para. 3).

3 Apps such as “Radical” make motion capture available for mobile devices. To find out more about the project visit: https://getrad.co/

4 A conlanger is a professional who creates their own/new languages.

5 For more information about this project, see the official website: http://embodyingreconciliation.com/site/#home

6 For more information about this project, see the official website: http://terpsichore-project.eu/

7 For more information about this project, see the official website: http://www.miralab.ch/index.php/rushmore_event/webdance-dance-for-all-using-advanced-e-learning-tools/

8 For more information about this project funded by the European Union, see the website: http://www.i-treasures.eu

9 For more information about this project, please refer to the official website: http://www.euh2020aniage.org

10 For more information about this project, please refer to the official website: http://www.wholodance.eu/