Gift players or playbourers? Who is playing citizen science games?

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Virtual Lab. Play a Game. Change the World. (*EteRNA*)

EteRNA (2010) constitutes a big data-driven digital laboratory, where more than 38.000 online citizen player-scientists assemble shapes representing ribonucleic acids (RNAs). Like numerous other citizen science games (also known as data games, human-based computation games, or games with a purpose, GWAPs), *EteRNA* is an example of a much broader playful phenomenon, which has been emerging in recent years.

Within those big data collaborative spaces players solve puzzles, categorize, identify and tag data, or participate in challenges. All this to help researchers deal with numerous questions, from biology, neuroscience, astronomy, high-energy physics, to linguistics and history of art, amongst others. The players predict protein patterns (*EteRNA*), map neural retina pathways (*Eye Wire*), classify galaxies (*Galaxy Challenge*), tag social language (*Metropolitalia*) or art works (*ARTigo*).

Similarly to other participants of the digital economy (e.g. 'modders', fan fiction writers, community managers), the citizen-players are not motivated by the monetary compensation for hours of their immaterial work, but are acting out of the desire for cultural production or simply contribution to a bigger idea (*Play a Game. Change the World*). Since those ludic laboratories are considered *a priori* pleasurable and leisure-oriented game spaces, they are especially successful in enabling 'productive activities of connected human minds' (Terranova 2013, 42). However, as becomes apparent in the above passage, free-time activities such as playing games for science, developing 'mods' (modifying existing software), writing fan fiction, or managing communities, amongst others, have been usually discussed and theorized from the perspectives of productivity, monetization, digital economy and free labour (Scholz 2013), or even in the case of *World of Warcraft's* 'gold miners'[1], playbour (Kücklich 2005) and ludic capitalism (Galloway 2013). It seems that today free labour is not only based upon idealism of creativity abundance and community building, but also on the capitalistic understanding of knowledge as added value.

However, considering citizen science games as productive spaces with an external purpose, where the collaborative spirit leads to the production of scientific commodities would not give justice to the complexity of the phenomenon. A theoretical framework

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[1] Players upgrading the characters in order to later on sell them or the virtual goods for real money.

based solely on digital economy does not embrace the multifacetedness of this experience. Citizen science gamers are not paid for their work, and more importantly they do not enter the gameworld with a commercial value-driven expectation. On the other hand, they are also participating in something other than a purely frivolous game, for it has an external purpose lying outside of the game itself. They are neither pure leisure players nor player-workers (Nakamura 2013, 199) or playbourers (Kücklich 2005). What are they then?

Citizen science players enter not as much a capital-oriented playful digital economy, it seems, but rather an economy based on a reciprocal act of giving and receiving. After all, science itself operates on the premises of intellectual gift circulation (Hyde 1983, 79). Games for science, similarly to MUDs (Multi-User Dungeons) of the 1980s and early 1990s, constitute '… virtual communities based upon gift economies … distinguished by their key differences from the real world of capital, labour and profit' (Nakamura 2013, 191). And science gamers find themselves entangled in a continuously flowing 'kula' exchange system (Bronislaw Malinowski qtd. in Mauss 1950/2007, 37), encapsulated within the 'magic circle' of a semi-fictitious playful online space.

When the designers and scientists of *EteRNA* encourage the gamers to help in research by playing, they open up a 'kula' exchange circle. The players collaboratively give their time and skills. The scientists return the gift on numerous levels: from offering a fun experience (game mechanics), welcoming in the research community (sharing the status of a citizen-scientist), acknowledging the players' contribution in academic papers (putting players as co-authors), to the greatest hope of a gift that, given enough time, will come back as a new medical solution.

In this paper, based on a case study of citizen science games, I will introduce *gift players* and contrast them with *playbourers*, already theorized in game studies and media theory. The latter category is built on the premises of games as part of a capitalist-oriented digital economy. The first one, proposed here, is centred upon an idea, well known to anthropology, of gifts circulating in the society, also in its recent digital and playful incarnation.

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