L'Inking You To A Knowledge Graph

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1 Qualifying Self: Capturing Individuals

In the era of the web of things, everything is connected to the web. The invisible wire that links domestic appliances, electronic gadgets and cars often trap human-beings that use, interact with, and drive them.

The quantifying self (QS1) movement describes individuals and groups engaged in the self-tracking of any data regarding biological, physical, and environmental activities. QS1 relies on all the technologies that capture measurable aspects of our lives. For instance, wearable devices can track weight, energy level, and sleep quality. Moreover, we can combine the metrics above to derive insight into health, cognitive and athletics performance [3].

Despite all the information we can already collect, a simple the question remains unanswered **What characterizes who we are as individuals?** To an answer to such a question, we must debate about the QS1' slogan, i.e., *"know thy numbers to know thyself"*. The idea of us as measurable entities is at least simplistic since it neglects all the aspects that we cannot reduce to numeric values. What we need in an alternative movement that promotes ways for connecting individuals and capturing the intrinsic originalities that characterize each of use. We call this **Qualifying Self (QS2)**.

The vision of a world of human-beings interconnected through the web is neither utopian nor dystopian, but it seems an obvious consequence of the spirit of the times. Indeed, at the time of social networks, the web is the place where social interactions happen via improved communication tools. However, if we consider how can we link people in the real world, we immediately reach an Orwellian atmosphere where everybody must be uniquely identified.

A controversial challenge, with many ethical implications, is identity resolution. Indeed, connecting human-beings to the web demands to resolve identities, which has many ethical implications, e.g., it contrasts with the self-determination principles. The QS1 movement itself received several criticisms concerning privacy, data-ownership, and the economic value of the information we share. Further problems and more practical problems that have social implication are data-fetishism, i.e., to the sense of achievement caused by the collection of numerical data, and the data-literacy, i.e., the knowledge required to interpret the collected data adequately.

A QS2 movement would not be free from debating the same topics, especially those related to privacy and self-determination. These shortcomings call for distinguishing between identity and individuality (or distinctiveness). The former

concerns identification, i.e., the act of understanding who someone is; the latter relates to people personality treats, i.e., determining what makes someone himself as an individual. Several moments in our lives influence and shape our personalities. Social Media already let us lift these moments to a different level, shared with all our friends and relative. However, how can we link ourselves more tightly, capturing those links that are still implicit?

In society, people look for a balance between being accepted and being rigi-nal[1]; The QS2 movement needs to capture the elements of this originality, in a way that is ethically sound. Our intuition is that interesting links became visible when we allow people to characterize their personalities more precisely.

Towards a QS2 movement, in this paper, we present a possible yet outrageous way to better capture people personality, letting them define what best describes who they are as individuals. Our idea starts with one of the most ancient forms of art, which is also historical and distinctive sign of belongingness and artistic radicalness: Tattoos[2,1]

In this paper, we envision L´ Inked Tattoos, i.e., machine-readable representations of Tattoos that use semantic technologies to capture, represent, and share the tattoo meaning in a fully decentralized way. Tattoos can be processed by linked data-based systems that turn them into L´ Inked Tattoos without forsaking the artistic aspect.

2 L'Inked Tattoos

In our modern society, tattoos reputation suffered from past times when mostly criminals and convicted people used to have one. However, tattoos popularity recently increased[2], and it became easier to see them around in living and working areas, and even on TV shows. Table 1 shows the percentages of tattoos per continent from a recent survey[3]. Nowadays we are more used to accept tattoos nevertheless their presence on a person' skin remains controversial. In fact, despite we progressed as society welcoming originality and embracing diversity, tattoos remain elements of distinction from an affinity to specific social groups, which often causes an intrusive curiosity.

Countries	Percentage
Europe	12%
Australia	14.5%
New Zealand	20
USA	24
Canada	24

Table 1. Tattoo prevalence in the general population in the world.

A common question that who has a visible tattoo often receives is *"What does it mean?"* The question arises because tattoos are cryptic. They convey the presence of meaning and symbols, but this information remains exclusive

[1] `https://en.wikipedia.org/wiki/Optimal_distinctiveness_theory`

[2] `https://www.theatlantic.com/business/archive/2016/10/tattooings-shifting-identity/503693/`

[3] https://ec.europa.eu/jrc/en/publication/eur-scientific-and-technical-research-reports/safety-tattoos-and-permanent-make-final-report

to a restricted and privileged circle of people. Instinctively, we perceive tattoos' symbolic value, and the catching game of understanding captures our attention. Moreover, getting tattoos is usually a painful process, which strengthen the meaning of whatever message they carry.

Tattoos carry an enormous amount of information that uniquely characterizes their owners and the tattoo artist who made it. However, this information is inaccessible. To this extent, we propose **L'Inked Tattoos**, i.e., capturing meaning, metadata, and any other information the regards a particular tattoo and its owner is a machine-readable way, This information links to many other resources concerning cultural, emotional, and artistic aspects, which define the personality of who owns the tattoo. Moreover, metadata regarding where, when, who, what, and how, i.e., with which tools, may link the tattoo to measurable metrics. In the following, we will briefly present some examples:

Meaning. Tattoos subject can be referenced as resources employing an image recognition systems. Moreover, adopting deep learning techniques one can survey non-obvious connection that the tattoo implies. All this information can be linked to existing knowledge graphs [4], creating links between people and concepts.

Fig. 1. Tattoo and Knowledge Graph Resources.

Self determination & Privacy. Adopting techniques for invisible-tattoos, we can imagine associating an openID[4] to resolve the people identity without aesthetic impacts. Similarly, *L'Inked Tattoos* might have privacy policies attached that enforce public cameras to preserve the person's identity.

Metadata & Metrics. We imagine to collect all the metadata concerning the tattoo creation, i.e., when, how many hours it took, where, what is about, who did it, which machine was used, and which ink was selected. This metadata can also be enriched with QS1 metrics regarding the psychological and emotional status of the person who was getting the tattoo. We envision the adoption of semantic block-chains to persist this information anonymously.

Connections. *L'Inked Tattoos* connect people via the resource they target. The first connection is the one with the tattoo artist, who indelibly signs the tattoo. Moreover, we imagine social networks employing *L'Inked Tattoos* to makes new connections between users, according to their privacy settings.

We imagine L´ Inked Tattoos to be an extension of the tattoo artists' workflow that does not change the artistic process. As Figure 2 shows, we imagine the workflow to be extended by one phase. As before, the tattoo artist draws a) and inks d) the tattoo to the subject who requested it. After the drawing an entity injection process is performed c); it produces a machine-readable document that

[4] `https://openid.net`

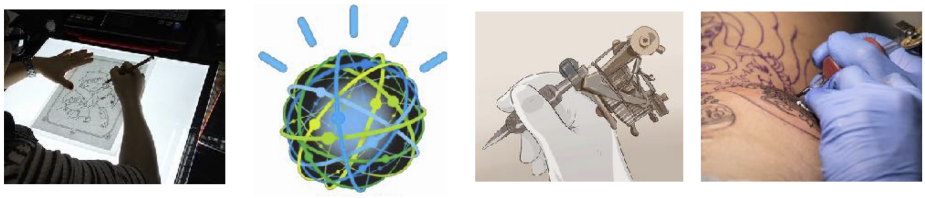

Fig. 2. The L'Inked Tattoos Workflow

represents the L´ Inked Tattoo. This process can exploit entity-linking and image recognition techniques. Then, the machine-readable document is uploaded into a smart tattoo machine which on-the-fly, using deep-learning techniques, encodes the information in the actual image the tattoo artist is inking.

```
<rictomm.com/tattoos/424242> a dbo:tattoo ;
  linking:resource dbr:Ouroboros ;
  linking:meaning dbr:Eternity ;
  linking:meaning dbid:Eternal_return ;
  linking:origin dbl:Celts ;
  linking:description "The ouroboros or uroborus ... " ;
  rdfs:seeAlso "Aurynn" ;
  linking:owner <http://w3id.org/people/rictomm> ;
  linking:when: <2016> ;
  linking:where: <SoulSkin Tatto, Prabiago, Milano, Italy> ;
  linking:artist: <Mirko Tedesco> ;
  linking:other <rictomm.com/tattoos/414141> ;
```

Listing 1.1. Example of L' Inked Tattoo.

References

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