

On Augmented Reality-Enabled Social Network — Traces of Pratitya-samutpada (Interdependence)

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This paper examines Eggpass, an augmented-reality social network trace, and its relationship to the doctrine of the Buddhist principle of Pratitya-samutpada.



Definitions

Augmented-reality usually refers to a combination of digitally-invoked information overlaid upon real-world information, affording the user a richer understanding of the surrounding environment. The machinery used within this field can be as mundane as automobile GPS navigation systems combined with online databases (ostensibly to locate the nearest Starbucks), to see-through head-mounted displays¹ for applications as far-ranging as air traffic control, brain surgery, construction work, military and gaming applications, to spatial-sound-tagging systems for sociable media projects².

The Buddhist concept of Pratitya-samutpada states that the existence of conditions brings on the existence of other conditions. It describes an interconnected and interdependent reality where all phenomena (actions, conditions, results) are fundamentally connected in some way. All human action affects perceived reality. All actions are social actions. “Phenomena” ranges from personal desires, emotions, to world-changing events.

Pratitya-samutpada suggests the cyclic *Twelve Links of Conditioned Existence*: Ignorance -> volitional impulses -> consciousness -> name + form -> six senses -> contact -> feeling -> craving -> clinging -> becoming -> birth-> death (sorrow).^{3**}

The following concepts of *anicca* and *anatta*, that “things” are transient and have no intrinsic entity but are perceptually-based also inform art. Found in the Buddhist literature illustrating the above:

“What we know as a ‘bed’ comes from the collection of numerous components to assume a known form. A ‘bed’ other than these components does not [independently] exist. ... but must relate to other concepts, such as ‘sleeping,’ a plane surface, a base, an empty space...”⁴

This random example brings to mind the artist Felix Gonzalez-Torres’ *Untitled* (1992), 24 billboards in New York City featuring an image of an empty bed.⁵ Viewers familiar with the artist read it as a commentary on the loss of his partner to AIDS; we bring our own ideas to all that we perceive. Our cycle states that conceptual thought brings upon craving, clinging, and then later, suffering.

Interconnectedness and Interdependence

These concepts can be applied across disciplines. In mathematical terms, X brings about Y. From the Heisenberg Uncertainty Principle to the parable of Indra’s Net, the hardware of the internet, the activist phrase “Think Globally, Act Locally,” to the present practice of mapping social networks online, we see manifestations of interconnectedness everywhere.

With the perceptual enhancement that augmented reality affords us, our hope is to enable the users of our system to visualize actions and repercussions. Perhaps the ability to view or hear or feel the consequences of our actions would somehow enhance our understanding of the interconnectedness of the world around us.

Eggpass I

Eggpass (2004), initially inspired by Stanley Milgram’s work on the so-called Small World Problem, was designed to be an open-ended trace of personal connections that would, over time, generate a complex map of social networks. One dozen hand-sculpted eggs were imprinted with the URL eggpass.org and a unique id number and then distributed to twelve individuals along with a simple set of instructions: pass the egg to someone with whom you are on a first-name basis; visit eggpass.org and input your egg number and location (personal comments, photos, name and email were optional). [Eggpass.org](http://eggpass.org) [image above] displays this information in twelve columns ordered chronologically, charting the progress of an egg as it is passed from person to person.

The shape of an egg was chosen for its familiarity, tactile comfort and symbolism as that of initiator, seed, or representation of genesis. An object as the centerpiece of the project was essential; our desire was to join the physical realm to the virtual, to merge the intimacy of face-to-face interaction with the borderless expanse of digital online communication. This work can survive outside the Web; an egg could be passed without being documented on eggpass.org and resurface years later when someone who may not even know the origins of their egg notices the website emblazoned on it and reinstates contact.

After almost three years of traveling the eggs became entities. Participants assumed that the eggs should be passed over great distances, exactly the opposite of the short, quick passes the creators expected. Eggs would go undocumented for months and then appear on a different continent. An egg, many passes down, was intentionally passed to a relative of one of the creators. Egg #11 was friendstered.

Eggpass.org now contains elaborate descriptions of passes with photos and short films of the eggs. One submission contains an animated GIF of the egg traveling throughout London being compared to various egg-shaped sculptures and buildings. The eggs begat stories, commentary and a linked community. In the terminology described above in the twelve links, eggs “became.”

In April 2008, all eggs seem to be dormant. A colleague in Champaign, IL set about to trace (and acquire) the eggs and was never able to approach any final tree node. From personal interviews with participants, we have determined that the eggs had become personal objects of affection. People became *attached* to them.

Eggpass II

Eggpass I created feeling, craving, clinging, becoming. For phase 2, we wanted to explore the interconnectedness of all phenomena, not just people. We chose a subset of the twelve links. Feeling, craving, clinging can all be determined through mood-detection and video devices. Domain of experiment could lay in geographic happiness-indicator databases.⁶

For a preliminary sketch, we propose a social tamagotchi with a dormancy indicator. When the egg has been cold (un-handled) for a certain amount of time, we force a pass. The egg-holder should be compelled to practice the act of giving (non-clinging) with the egg.

We do not specify that the passee be an acquaintance, for if interconnectedness is true, it is also relevant for strangers. A pass to a random individual highlights this. In addition, the act of passing from stranger to stranger should reduce attachment to the egg. And finally, we do not ask for names of individuals, since identities are transient issues.

There are two aspects to this work, and one is the performative, transactional interface between the passer and passee; at once the practice of non-clinging and also the practice of social interaction. The second aspect is the culling of data which could be derived from international GPS monitoring systems.

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