

RE-PLACING EMBODIED INTERACTION

Palestinian Architects Virtual Community

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Abstract. Our ongoing project *Palestine Architects Platform (PAP)* –and PAP VE is a project intended to re-bond Palestinian architects and facilitate communication between them in Virtual Environments “*virtual land*” using virtual means. We used it as an example to argue that its inherently embedded spatial metaphor could compensate for the physical disconnectedness, and allow interaction on many different levels. Our paper proposes an interactive archiving and networking location where discourse is not only stored but categorised, analysed, retrieved and used to start new topics, or can be used to improve new debates. The focus is on the social values of PAP network and its empowering nature. The design and the structure is not simply a system for online socialisation rather it is a result of thoroughly studying available networks and their principles. It is a result of deep analysis of reality behind this community. We finally propose a set of principles that can secure a real innovative and creative knowledge exchange.

1. Introduction

For the last two decades, online and virtual communities were the centre of rapidly developing research. Howard Rheingold (1993) argues that judging by their impact; online communities can be almost similar to real communities.

“The virtual village of a few hundred people I stumbled upon in 1985 grew to eight thousand by 1993. It became clear to me during the first months of that history that I was participating in the self-design of a new kind of culture.”

The new developing environment is simulating “a kind of speeded-up social evolution” (Ibid). The simulation is evident in many aspects of everyday life and utilises metaphors that reflect this relationship. In certain professional contexts virtual communities are benefiting from the extended forms of interaction enabled by the new virtual media, whereas, in business world online communities are a tool for overcoming distances and extending productivity. E-learning is emerging both as a strong tool to support traditional teaching, and also as an independent and exclusively online tool. Architects are using Virtual Environments – VE – as forms of representation in order to simulate endless scenarios and possibilities that otherwise cannot be experienced in Real Environments – RE – including human values like ethics (Al-Attili and Koutsoumpos, 2006).

This ethical or perhaps moral aspect of human nature is sometimes represented in online communities, by some oppressed communities. “Diasporic groups are no longer infrequent or exceptional” (Dayan 1998, in Libes and Curran, 1998, 111).

Palestinian community is one example that has been doing that not only by means of internet but during their history through creating communities in different regions of the world and until today, such efforts are taking place by different media channels and interests – e.g. *Journal of Palestine Studies*, where debates concerning culture, architecture and archaeology in Palestine are raised; a radio program called '*Rasael Shawq*', or yearning messages, that is devoted for linking Palestinian community through messages from relatives or family. Other pioneering communities to emerge in the Palestinian Diaspora were; General Union of Palestinian Students - GUPS, General Union of Palestine Workers- GUWP, General Union of Palestinian Women - GUPWom, General Union of Palestinian Teachers – GUPT, Palestinian Red Crescent Society - PRCS (or *Hilal*) (A. Brand, 1988, 13).

In real life isolation and fragmentation of the Palestinian society due to historical events and forced immigration, even within their land due to checkpoints and apartheid wall, all manifest the need for different channels of communication. Consequently, individuals and institutions are trying to locate themselves in the global arena of the international media through the cyberspace. One can now find hundreds of websites covering topics related to Palestinians, their Culture, folklore, resistance, news etc. Thus, cyberspace is providing a new channel of communication Palestinians inside Palestine to reach out to the world and exchange and share expertise with other Palestinians outside Palestine.

Many of these websites are for Palestinian architecture. Recently, the University of Beir-Zeit at Ramallah, has created a virtual gallery for the Palestinian art and architectural heritage; others like NGOs sites are posting projects of Palestinian cultural heritage conservation in their websites. Some

websites are concerned with the destruction that took place in the architectural fabric in Palestinian cities and villages.

Architects are not merely designers of living space, they also share a cultural discourse with their space. After all, *space* inevitably has a setting (historical, cultural, and emotional) and a recipient (possessing a set of senses), upon which actual meaning is critically dependent. This contextual setting projects beyond the space's realm itself, in comprising both processes (design) and products (architecture or built environment) relating to human action in relevant regards. In particular, it encompasses both *non-communicative practices* (behavioural and beyond language) and *communicative practices*, including the processes, procedures, and methods in relation to spatio-temporal styles of life, the products of non-communicative processes and practices (embodiment), and the relevant social traditions that combine both. Architects' challenge is to sustain and improve these processes, such that it can maintain and, at the same time, reproduce cultural meaning, to the extent that if we do not understand the ways and means of people's mode of *being-in-the-world* - what they are concerned to do and to produce - we will have great difficulty in understanding their spaces or architecture. In sum, architecture has a wider functional context, and in order to sustain or preserve it we need to meticulously sustain both communicative and non-communicative practices.

In this paper virtual media of communication and cyberspace are considered to be an institutional body that could provide Palestinian architects inside and outside Palestinian territories with a domain for communication, from where they can exchange experiences, create consensus, seek expertise and create new ideas to support the Palestinian architecture on the ground regardless of all physical and political barriers. Virtual environments are also considered, within this endeavour, to represent land as a metaphoric element of regrouping.

We are going to differentiate between forms of interaction in virtual environments and cyberspace on one hand, and real space on the other hand, in order to establish the former as a space fit for interaction in line with real space. We will also introduce PAP- Palestinian Architects' Platform- and explain its theoretical framework, then examples of implementations.

Finally we will introduce virtual PAP, which is a sample virtual environment implemented in SecondLife to act ideally as a virtual homeland gathering architects and helping preserve Palestinian architecture and heritage by transforming the theoretical framework into a virtual environment.

2. Virtual versus Real

The relation between subject and space is a problematic one. In a way we have the dilemma of having a real space that has a function and meaning and for many users it stands as a repository for memories and interactions. What we call real space is a combination of spatial activities supported by material artefacts that are created through our interaction and has formed what we call place.

Every subject explores the character of built environment as described in Bachelard's *Poetics of Space* (1964), the home as a cellar, a garret and a hut. Certain parts of our everyday spaces serve as "repositories" of memories, beside what Castell (2000, 441) considers to be a material support of time-social practices. They also provide a person's prototypical spatial experience, a reference point from which all other spatial experiences derive and with which they are compared. Space is appropriated and adopted to shape the place that we want to occupy. "The placeness is created and sustained by patterns of use; it's not something we can design in" (Harrison & Dourish, 1996).

In real communities people have many constrains that influence their interaction. Although VE is understood in the same way we understand RE, it consists of a 'place' which is separate from 'space' (Malpas, 1999; Gieryn, 2000). 'Place' is a 'space' holding activities and cultural meanings and VE, we argue, is space-less place where the physical compound is missing while the interaction is still existent. This distinction has created the vision of the cyberspace as the space of possibilities. Coyne argues that "cyberspace is a hope, an exception, the future fulfillment of a current possibility, rather than a current reality" (1995, 154), while Levy highlights the underlying physical aspect of this new space which he defines as "the communication space made accessible through the global interconnection of computer and computer memories" (1997, 74).

Time and Distance, territorial aspects, control level, and knowledge exchange were indicated by researchers in the field of community building as major dimensions that have strong impact on our interaction with real space.

2.1. TIME AND DISTANCE

In real space, distance strongly matters especially in face to face interaction. However, cyberspace dramatically eliminated this factor (Monge & Contractor 2003, 5). The immediacy of receiving feedback in cyberspace and its liberation from limitations of physical barriers makes it a very a good medium for dialogue and communication. "The distance-free cost structure of the Net transcends spatial limits even more than the telephone, the car or

the airplane because the asynchronous nature of Net allows people to communicate over different time zones” (Wellman & Gulia, 1996).

2.2. TERRITORIAL ASPECTS

The territory or domain of cyberspace and virtual reality has no boundaries; on the contrary, it is an ever expanding space. By using it and adapting it to their needs, users are modifying the virtual space, thus, becoming producers not only consumers.

2.3. CONTROL LEVEL

In *The Cyberspace Era*, Mark Poster (1990, 92) suggests that while the discourse practices in the Panopticon based on controlling masses of people to advance the industrial process, the data base 'superpanopticon' discourse in the post-modern is a means of controlling masses in the post-modern, post-industrial mode of information. Such a discourse analysis when applied to the mode of information yields the uncomfortable discovery that the population participates in its own-self constitution as subject of the normalising gaze of the 'superpanopticon'. Poster saw the database, which is the main blocks of the cyberspace structure, as cloning type of tool for individuals that could participate in detriment of the “real” self without that “real” self ever being aware of what is happening (ibid, 1990, 92). Here users in the cyberspace are facing a “system of surveillance without wall, windows, towers or guards. The quantitative advances in the technologies of surveillance result in qualitative change in the microphysics of power” (ibid, 93). On the other hand control is also exemplified by the “digital divide” where the connectivity or the “empire of real-time” as Virillio has called it, is intensified in some parts of the world and unknown in the other “real space”. This would divide the world into two categories: “haves”, those who live to the beat of the real time of the virtual city, and the “have-nots”, those who survive in the margins of the real space of local cities (Virillio, 1997, 74).

2.4. KNOWLEDGE EXCHANGE

“Knowledge is itself power” (Francis Bacon, 1561-1626, quoted in Graham 1999, 93), knowledge is always said to be a source of power and a harbour for oppressed societies, stemming from the idea that “invisible knowledge escapes visible power” (De Carteau, 1988, 83). Moreover as (Dayan 1998, in Libes and Curran, 1998, 111) has emphasised that “diasporic groups are no longer unfrequent or exceptional [...]. One can expect ethnographers to shift their attention away from their traditional objects (spatially circumscribed

communities) and to start studying those communication devices that maintain dispersed groups alive by linking peripheries to centres and connecting presents to pasts”.

From real to virtual or from cyber to real is what to be considered as a deliberate movement that can enhance our world. Shifting communication between both worlds is a consequence of the changes in each one of them. When territorial aspects bring lots of barriers on our communication, virtuality and immateriality of cyberspace can be the best lead. When power and control overwhelm democracy, cyber can be the channel to keep the flow of communication.

Even with high technology that secures high levels of control monitoring over communication in cyberspace, it is still an attractive domain for freedom of expression and speech. We encounter blogs, networks and forums that all have people gathered around a common goal of (e.g., Human rights, Children and education, Peace, Cultural Heritage, health issues). These sites benefit from the diversity of users and at the same time can influence their reality.

Between real and virtual *placeness* can be accomplished and a society like structure can be achieved. From this perspective and with reflect to the nature of Palestinian architecture and the reality of Palestinian architects we envision a community like network on the internet that can facilitate and strengthen the communication between the Palestinian architects over issues related to architecture and mainly Palestinian architecture.

3. Structure of PAP

The creation of PAP is associated with empowerment of Palestinian architects, therefore, there are certain aspects that should be emphasised more than others and that what stresses its uniqueness. The main five principles that we proposed for PAP are a) Motivation and inspiration, b) Clear goals, c) Accessibility to resources, d) Rules and coordination and e) Continuous interactivity.

3.1 MOTIVATION AND INSPIRATION

PAP is a transition channel between real world and virtual world, it creates place, membership and strong ties between Palestinian architects. This makes PAP a good domain for communication and exchanging ideas. However, there is the symbolic and metaphoric value of PAP as a platform where Palestinian architects can raise their voice and play their role in politics, development and decision making process. Further, to reach the mind of willing listeners “there must be an opportunity to win their

attraction” (Shapiro, 1999, 207) and that happens through inspiration “Topic seeds could be planted that are politically important, local, and controversial. Topic high in human-interest combined with an element of danger or risk may encourage conversation” (Millen and Patterson, 2002). Such topics in PAP context are: architectural heritage conservation, camp anthropology in the Palestinian cities and destruction in the architectural heritage that resulted from Israeli attacks to the Palestinian cities.

3.2 CLEAR GOALS

The ultimate goal for PAP is to influence the real world through the continuous interaction between its members and their fruitful discourse and contributions to their community. Through the continuous improvement PAP aims to attract new members to take part of its activities. The main goal of the community should be stressed in all levels of implementation and development of the community. This would enhance the willingness of the community members to exert efforts and share information necessary to achieve the collective goal.(Shea and Guzzo, in Hinds and Kiesler 2002, 220).

3.3 ACCESSIBILITY TO RESOURCES

PAP resources play very important role in attracting members and shaping the community. Erickson (1997) suggests that a successful community allows all community members to create, control and distribute collective good. This on the other hand can affirm the community special identity and the special privilege of having this membership. In Usenet Groups the accessibility to resources took two alternative ways. First, anyone can read the discussions but only admitted members can post. The second is that only admitted members can post and read (Kollock and Smith, 1994).

For PAP as an information and knowledge sharing space it is proposed to take the second option where members have higher level of trust. Further, the variety of data sources provided for users help to achieve more interactivity among users (Millen and Pattersonm, 2002). Heron, and appropriate sum of resources should be provided (libraries, books, collections), which will be expandable accordingly with the users contributions. In addition to a list of links, bibliographies, books and previous architectural works of Palestinian figures. These resources would be very helpful, as a reference point to which users can revert when needed during their interaction.

3.4 RULES AND COORDINATION

Individuals are more willing to comply with a set of rules governing the collective good if they believe the rules are efficacious and that most others are complying with the rules (Ostrom, in Kollock, 1994). Therefore, a set of rules that protect copyrights and creative work would enhance members' contributions; it also helps smoothing progress of interaction. What was called by L. Shapiro (1999, 170) "the principles- in- context approach" is based on neither going on with constraints of existing rule forms, nor start putting new rules from ground. Rather, borrow from time-tested arrangements to achieve efficient and just results in a different set of circumstances. In this way it is possible to take the underlying principles of the existing law and rules and map them to fit a new context, in addition to some necessary modifications.

3.5 CONTINUOUS INTERACTIVITY

Interaction in an online community cannot be guaranteed by utilising specific tools; it is in fact dependant on the community requirements and on its members' performance and contribution. New strategies and tools for raising the interactivity level within the community would emerge increasingly by time. Therefore to keep the strength of the interactivity there should be a constant development process to which the interaction tools are exposed. Generally, the first stage in building the on line community is to give it a structure that allows the empowerment of the interaction, both in design and in the technology (programming and system capacity) (Reips, in Batinic, et al. 2002, 241; Gibson & Cohen, 2003).

Many researchers in the field of online communities have highlighted four important characteristics of the community that influence its interactivity; sociability of the system, adaptability, identity and the group memory or the archive.

3.5.1. Sociability

It is important to have a structure of the online space that supports social engagement of its members (Millen and Patterson 2002, Wellman 1996). Features such as identity affirmation and role playing, rich content, pattern of knowledge exchange and communication intensity are some basics for online sociability. (Castells, 2001, 118; Powazek, 2002, 10; Duck in Beyerlein, et al. 2001, 97; Erickson, 1997)

Sproull & Kiesler emphasised that the use of Internet-based textual communication was helpful in developing relationships similar to FtF support groups (in Beyerlein, et al. 2001, 94). Besides, having some more tools could also enhance the on-line communication sociability. For

instance, user area could show his last visit, number of users on-line, mailing list, calendar, etc. Other factors that might increase sociability of the system are the notification alert (Millen & Patterson, 2002) and is the multilingualism and providing different displaying possibilities (Reips, in Batinic, et al. 2002, 241). PAP VE utilises an extremely important metaphor for interaction. It utilises embodiment which is one of the most effective ways of reconstituting relationships through virtual embodied interaction.

3.5.2. *Adaptability and Adaptation*

It is important to have a structure of the online space that supports social engagement of its members (Millen and Patterson 2002, Wellman 1996). The system should inherit a capacity of being exploitable or flexible for changes whenever needed. Also the system should be adaptable in a way that new users should be able to access the conversation from any point and contribute to it. The VE allows many forms of interaction. Navigation is based on a model of *walk through* and *fly* that is widely adopted in many computer games.

Moreover, the textual characteristic of the on-line communication concludes the lack of facial expressions and body language characters like gestures. Med argues that if we are not able to reflect our own action, such as body movement facial expressions, these symbols become less significant (in Beyerlein et. al, 2001, 51). Virtual PAP permits facial expressions and some gestures that are already made available by the software providers. It also allows members to propose specific expressions and gestures that are popular in real life community.

Thus, we adapt to the system of interaction to transmit our information into an understood shared language. This adaptation process from the user's side could be easier if the system has a flexible structure that supports users' learning and engagement in the interaction.

3.5.3. *Identity*

Identity plays a crucial role in motivating member to participate in discussions (Donath, in Smith & Kollock 1999, 31). Members' identification with collective memory, or increasing commitment to an effectively functioning transactive memory system, can motivate them to contribute their information and experience (Kalman, et al. in Hinds & Kiesler, 2002, 344). Generally, identification makes clear boundaries for the interaction and makes it clear "who can make use of the collective good" (Ostrom in Kollock, 1994). These boundaries does not designate a passive exclusion technique, it rather indicate the special interest of the group. Features of online community that influence identity affirmation are;

3.5.3.1 *Group Specialty*

Where members transform their perceptions of “us” and “them” to the more inclusive “we” (Cole, in Beyerlein et al. 2001, 51). Having clear boundaries makes it easier for members to start collaborating over clear goals. Furthermore, the increase in opportunities of choice in the CMC demands an increase in selectivity and requires a filtering technique to filter out the most favoured information and contacts (Bainbridge, in Batinic et. al, 2002, 393)

3.5.3.2 *Members' Identity Affirmation*

Members usually derive part of their identity and sense of being from organisations or work group to which they belong. This is achieved by providing elements that confirm users' identity. Besides, identity persistence is very important to encourage contribution based on reciprocity. Tools like name, title and digital signature can be added to users' contributions automatically. For online community, members contribute valuable information, because it could enhance “the feeling of efficacy, that is, a sense that they are playing an effective role in the community's environment”. (Kollock, in Kollock & smith 1999, 228)

3.5.3.3 *Trust*

In the CMC trust has been called the glue of the virtual workplace (O'haradevereau & Johanson, in Gibson and Cohen, 2003, 61) as without some degree of mutuality and trust, the knowledge exchange is not possible to start (Cohen & Prusak, in Ackerman, et al. 2003, 304). Two trust problems usually face the CMC knowledge exchange; firstly, people who receive information through the CMC have to trust the precision of the source (or the sender). Secondly, individuals who send this information need to be confident that sharing information would not harm their professional or career advancement (Matzat, in Batinic, et al. 2002, 396). These problems can be reduced by applying some visibility in community structure, mainly in each participant's contribution and expertise in away that shrinks the fear and risk of sharing information (Weisband, in Hinds & Kiesler, 2002, 312). This kind of visibility is a source of assurance that members' online identities are their real world identities and that “there is no anonymity” (Millen & Patterson 2002). However, in VE PAP, it is possible to ignore real life identity and opt to have a totally new identity. Since users possess avatars to represent them, each user can customise his avatar. Sociability of the system is again a prerequisite for trust building in an online community; it could encourage people to overcome their uncertainty. Open and prompt communication among members is believed to be one main feature of online trusting relationships (Kanter in Gibson & Cohen 2003, 69).

3.5.3.3 Group Memory- archive-

In online communication, Godwin (1994) describes group memory as institutional memory; that is, a durable record of the events and history of any group. He basically talks about “the asynchronised communication” (in Kollock, 1996). This group memory is a system that could encourage users to read previous posts about the topic at hand. Using archive and knowledge management to report the product, as the achievement of the group cooperative work is a motivating strategy. As it gives a sense of durability of the community’s membership, and provokes competition for self-image. Consequently, it could increase creativity and innovation. This requires us to understand the methods of knowledge management, in a way that we can use this knowledge for future work. Such a method could conclude processes like: capture, organize, retrieve (Erickson & Kellogg, in Ackerman, et al. 2003) and represent, update and edit if needed. One method which is generally accepted as suggested by (Urdaneta, 1999) is that, knowledge passes by process of three stages: “acquiring 'creation', retaining 'storing' and sharing knowledge”. As organized categorized archiving of the knowledge exchange is more helpful than simply automatic archiving for the knowledge exchange (Finholt, et al. in Hinds & Kiesler, 2002, 358).

4. Implementation: design and techniques

PAP designed with a vision that is different than other online communities, it is designed to grass root a real interaction between Palestinian architects all over the world and to reflect on their country’s architecture. Therefore, social, cultural, political, intellectual and legal aspects are all studied and analysed within the frame of online networks. Having highlighted the required features for an online interactive community in the previous sections, we will focus, in this section, on the archive, the VE and the discourse management and development, because these are the most important sides of PAP. The Archive and VE are active parts and not only a database storage location, because the archive facilitate the discourse through interactively communicating with users while exchanging information between each other or while browsing and searching for information in a way that enrich the discourse, and for the fact that VE is an intuitive platform of interaction.

Following are some design aspects in which we employed the previous theoretical analysis.

4.1 DISCOURSE

The most important part of the archive from which all other parts are extracted is the discourse, which is created through group discussions, mainly by asynchronous discussion board. Where authorised members can post topics or Replies to other topics, and add illustrations about the topic if needed. The discussions are saved into the archive. The discussions are not simply saved but passed through analysis and categorisation. Moreover the knowledge presented in the archive area is not only illustrated chronologically or alphabetically. Rather members have two options of showing the component of the archive

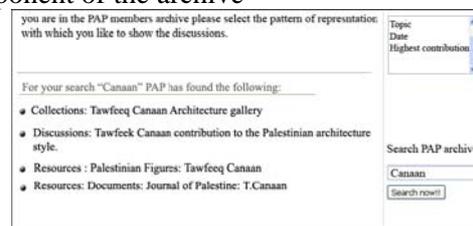


Figure 1. Screenshot showing the search screen portal.

4.1.1. Sociability

Search engine facility is made available to members. Search results are categorised according to information location within the community, i.e., discussions, resources, or collections.

The process of acquiring information using the archive needs more parameters; users could get as precise information as they would seek. While in the process of documenting the discourse the only needed procedure is to make sure that the users are not violating the rules of the discourse. The information then is automatically categorised and saved into PAP database following a special model architecture that create a set of key words according to the discussion topic. Moreover this architecture is also capable of automatically linking related topics. Accordingly the archive components could be rearranged frequently with each new discourse.

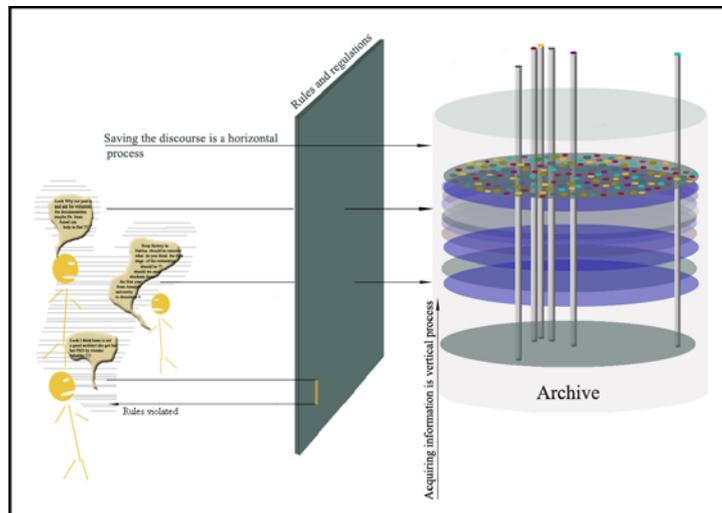


Figure 2. Diagram showing the relations between different part of the system.

A soap factory for example is linked to terms like: *traditional, heritage, restoration* etc. Thus if the user is trying to find “*traditional*”, the *soap factory* discussion topic will be listed. Other topics might also be listed under *traditional*, such as; *Hammamat, courtyards, Khan, Souq...* etc.

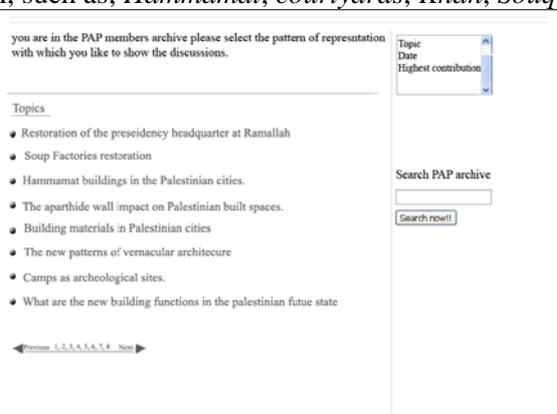


Figure 3. Screenshot showing the search result topics

4.1.2. Collections

There are different types of collections: a) user's collection, which is customised personally by each user in his private area. A private collection may contain many things like images, group's discussions, documents and drafts of future discussions...etc. This is important for PAP functionality since some users may prefer maintain privacy. Or even the information the user likes to contribute might not be ready for sharing, therefore this area

will give the chance for members to improve and edit their material, before adding it to group collective areas. It is more like a personalised workplace that has gallery, calendar, documents box, and draft box.

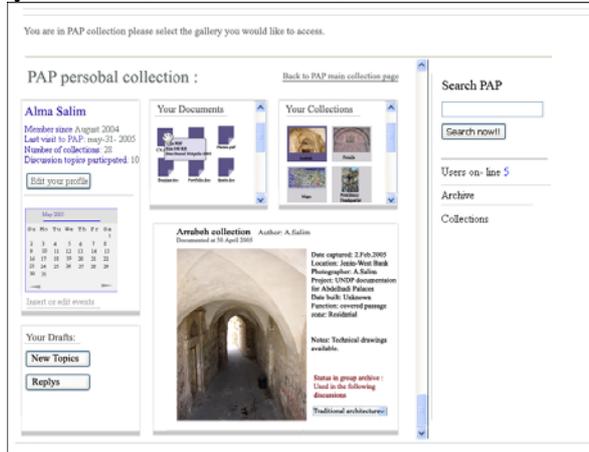


Figure 4. Screenshot showing a sample personal collection.

b) Group Collection which is a collection of images created by the group interaction, and not simply a pre- designed collection of images about everything related to Palestinian architecture. The group collection is subjected to editing, filtration and categorisation; a process held by delegated participants.

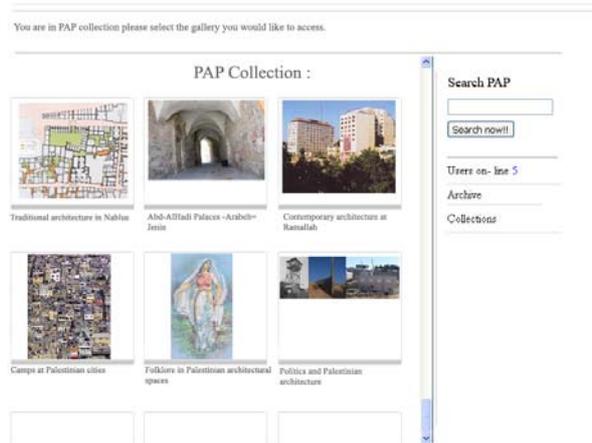


Figure 5. Screenshot showing a group collection.

5. Towards *re*-placing embodied interaction with virtuality

The last step in our ambitious project is the introduction of PAP virtual environment – PAP VE. Initially the environment was modelled using 3D modelling software and enabled to permit online multi-user interaction. 3DStudio Max was used in the modelling process, and Macromedia Director was utilised to enable interaction. Database functionality used Macromedia ColdFusion as a platform. The overall objective is to provide a symbolic 3D space where avatars can meet and interact.



Figure 6. Screenshot showing: lift: virtual arial view of PAP VE, and right: zoom in.

The introduction of online multi-user VEs that are professionally maintained and well advanced than our own world provided a new arena for our environment. Multi-user VE such as Alpha world and SecondLife offer 3D environment that can be easily customised and that permits many forms of interactions. A user can subscribe as an avatar and may opt to maintain his real identity or pick a totally new one. Groups can be formed and land could be terra-formed. In our example we changed the water body surrounding PAP VE to mismatch reality.

Avatars are enabled to navigate by walking, running, swimming and flying around PAP VE.



Figure 7. Screenshot showing an avatar flying over PAP VE.

One of the most interesting features of the new world is the possibility of building any kind of 3D shapes; a quality that comes extremely handy to architects in particular. The ability to model real life architecture in SecondLife is an additional advantage that gives PAP VE a symbolic value derived from Bachelard's phenomenological explanation of intimate space.



Figure 8. Screenshot showing a) lift: the view from Gaza to West Bank, and b) the opposite.

6. Conclusion

Our attempt to compensate for the loss of land, and therefore, embodied interaction, may come across as an extreme and rather unrealistic. After all, objects, *space* in this case, inevitably have a setting (historical, cultural, and emotional) and a recipient (possessing a set of senses), upon which actual meaning is critically dependent. This contextual setting projects beyond the space's realm itself, in comprising both processes (design) and products (architecture or built environment) relating to human action. In particular, it encompasses both non-communicative practices (behavioural and beyond language) and communicative practices, including the processes, procedures, and methods in relation to spatio-temporal styles of life, the products of non-communicative processes and practices (embodiment), and the relevant social traditions that combine both. We rely on the power of metaphor and familiarity to enable architects to utilise PAP VE as an arena to replace embodied interaction. The project is an ongoing research.

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