From Individual to Collective Personas Modeling Realistic Groups and Communities of Users (and not Only Realistic Individual Users)

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Abstract— **Personas are user models that are represented as specific, realistic humans. Initially focused on the modeling of individual users, the Persona method (see, e.g., Cooper) is gradually changing towards the inclusion of collectives of users (groups, communities, etc.). In other words, a *"Collective Personas"* trend is emerging. This paper reports a literature review reflecting this emerging trend. It synthesizes some issues and avenues related to collective personas development.**

Keywords- personas, collective personas, interaction design, social interaction design, user modeling, group modeling

I. INTRODUCTION

Personas are user models that are represented as specific, realistic humans. Initially focused on the modeling of individual users, the Persona method (see, e.g., Cooper [2][3], Pruitt and Grudin [15]), also called method of "individual personas" [14], is gradually changing towards the inclusion of collectives of users (groups, communities, etc.). In other words, a *"Collective Personas"* trend is emerging, as evidenced by a number of works attempting to extend the Individual Persona method to collectives. In this paper, after a short reminder on Individual Personas, we report a chronological and comparative literature review of the works we consider to belong to the Collective Personas trend. We conclude the review by synthesizing some issues and avenues related to the development of collective personas.

II. INDIVIDUAL PERSONAS: A SHORT REMINDER

Our presentation of Individual Personas will be mainly based on the Cooper's founding Persona method ([2][3]). For a review of existing Individual Persona methods, see [5].

A. Individual Persona Definition and Construction

Personas are "user models that are represented as specific, individual humans" [3]. In other words, personas are fictional *personifications* [3] which represent *realistic* individual persons [14]. This realism is heightened by identifying the persona by a name (e.g., Mike) and a photo. Personas are derived from significant *behavior patterns* (i.e., sets of behavioral variables) elicited from interviews with and observations of users (and sometimes customers) of the future product. *Behavioral variables* are axes or ranges (e.g., "necessity-only" vs. "entertainment") across which product use is segmented. For each pattern identified, information about related users' characteristics (e.g., goals, attitudes,

activity flow) is synthesized in order to reveal personas. To translate the knowledge about users/personas into a user-oriented design solution, personas are role-played as the characters of *scenarios* of product use.

B. The Collective Aspects in Individual Personas

The typical case for individual personas, Cooper and Reimann [3] claimed, is "to be completely unrelated to each other and often from completely different geographic locations and social groups." However, Cooper and Reimann acknowledged, it sometimes "makes sense" for personas "to be part of the same family or corporation and to have interpersonal or social relationships with each other." This acknowledgment shows that the collective aspects are not completely absent from the Individual Personas method. Nevertheless, the emphasis is not on the collectives to whom individuals belong, but on the relationships between the individuals, so that the notion of Collective Persona is not made explicit, as opposed to the works described below.

III. COLLECTIVE PERSONAS: A CHRONOLOGY

The notion of a Collective Persona appeared explicitly in six works that we will present chronologically in this section. For each work, we will report its motivation, its genre (researcher's work, practitioner's work, marketer's work), its contents (collective persona definition, persona construction method, etc.), and its applications (when all this information is provided by the authors of the works).

A. 2004: Group Personas$_1$

To our knowledge, the first explicit work on collective personas is Kuniavsky's work [11], a practitioner's work. It describes how Kuniavsky and his students-practitioners constructed the *Group Persona* method while respectively training, and being trained to, the original Cooper's individual persona technique. Students were told to apply the technique to the design of some wearable/portable technology for people to use in an amusement park. In the course of elaborating individual personas and their related scenarios, Kuniavsky and his students realized that the technology will be simultaneously used by two or more people forming a coherent group. They consequently got the idea of modeling such groups of people as a *group persona*, rather than as individual users, and of modeling their goals as group goals (defined as a negotiated combination of individual goals).

Kuniavsky and his students developed a 4-step method:

1) Making rough outlines of the clusters of people to focus on, and giving them distinctive names (e.g., "Young Parents, Young Kids;" "College-age Friends").

2) Defining axes along which situating the group (e.g., for the "Young Parents, Young Kids" persona: NUMBER OF PEOPLE IN GROUP: 5; [KIND OF] PEOPLE IN GROUP: 2 adults, 2 kids ages 3-10, grandparent;etc.).

3) Iteratively creating personas: (a) Roughly sketching the persona; (b) Brainstorming the persona details; (c) Editing the persona description (cutting the irrelevant details); (d) Writing preliminary scenarios; (e) Tuning the personas according to the scenarios.

4) Finalizing the personas: Finalizing the fleshing-out of group personas (e.g., The Ancona Family) and related scenarios felt to be typical examples of groups who visited the park and how they would behave.

Kuniavsky suggested applying the group persona method to "groupware" such as entertainment, education, and collaboration software.

B. 2006: Organizational Personas₁

A second explicit work dealing with collective personas was achieved at "Cooper" (the corporation founded by Alan Cooper). This is a practitioner's work on the so-called *Organizational Personas*. Such personas are created when the problem the practitioners are working on "is in the domain of a complex, multi-user, business system" [4]. Organizational personas "are fictional organizations that represent certain key characteristics of the (visited) companies." They "highlight the patterns and objectives of the kind of organization that requires this type of complex system." Practitioners from Cooper position their user personas in "relevant roles" within their organizational personas, to model the functioning of the system they are examining.

C. 2006: Communitas & 2009: Collective Personas

A third explicit work on collective personas is our own work, a researcher's work. This work was initiated in 2006 in order to extend the Cooper's persona technique to the design of intranets as collective tools [8]. This work was interrupted in 2007 (because it was not a priority for our team), and resumed in 2009, in a different context: the design of social semantic collaborative tools for assisting corporate intelligence tasks [9][6].

Communitas. The idea of addressing Collective Personas is born under the USABLEINTRANET project. The idea came from the intersection of two research goals: (1) to elaborate individual personas representing intranet users; (2) to elaborate collective scenarios of intranet use. Knowing that in the scenario-based design literature, a distinction was made between individual and collective scenarios, we thought we might as well distinguish individual and collective personas, so that we could develop intranets better adapted to the collectives who use them, and not only to individual users.

We reviewed the literature, and discovered only the two works on Group Personas₁ and Organizational Personas₁. We tried to find the most appropriate name to refer to the notion of a "collective persona." We found a Latin name *à la* "Persona," namely *Communitas*. We selected this word because it referred to: (a) a notion increasingly employed at the time by researchers interested in collective system design, the notion of a "community" (community of practice, community of interest, etc.); (b) definitions that we wanted to convey, such as "an unstructured community in which people are equal" (Wikipedia).

The work had stopped at the time to setting the following research agenda: (1) to continue the literature review on collective personas, (2) to further analyze Kuniavsky's "Group Persona" concept and method, (3) to further analyze the collective aspects appearing in individual personas, (4) to feed the collective personas method by elements of the scenario method, (5) to explicit the links between individual and collective personas.

Collective Personas. When we resumed our work in 2009 under the French ANR project ISICIL, we decided to abandon the term "Communitas," because it seemed too restrictive and too community-connoted. We choose a more neutral and generic term, that of *Collective Personas*. We updated the literature review on collective personas, and extended it to collective scenarios. To type the collectives and their characteristics, we relied on the literature on collective models—models describing standard collectives (groups, teams, departments, companies) and non standard collectives (online communities, social networks).

We elaborated a 4-step method: *(1) Identifying "directing contexts"* (i.e., the contexts orienting the collective and individual personas' or actors' activities to be supported by the system), and the actors carrying the directing contexts. *(2a) Identifying the critical individual and collective actors* and their critical characteristics (goals, roles, tools, etc.) through interviews and observations; concerning the collective actors, the dimensions considered were among others: formal ↔ informal, sustainable ↔ ephemeral, intra-organizational ↔ extra-organizational. *(2b) Identifying the relationships that users maintain. (3) Identifying the current and future scenarios involving the interacting actors. (4) Translating scenarios into story-boards.*

This method has been used in particular for analyzing practices and needs of the individuals and collectives performing corporate intelligence activities within an Environment and Energy Management Agency.

D. 2008: Group Personas₂

A fourth explicit work on collective personas is also a researcher's work [1]. The focus of this work was the visualization of *Group Personas* through Web 2.0 collaborative software. This software "analyzes data from social networks and measures the feelings, perceptions, and activities of the group members and displays a summary of these measures." Group Persona Visualization is intended "to inspire communication and collaboration among groups in which status information is often fragmented across a wide variety of Web locations."

E. 2010: Organizational Personas₂ & Persona Ecosystems

E. 2010: Organizational Personas$_2$ & Persona Ecosystems

A fifth explicit work on collective personas is a marketer's work [10]. It introduces the very interesting notion of a *Persona Ecosystem*, which is an "additionally refined organizational persona." An *Organizational Persona* is "an archetypal model of a segment of customer or partner companies." It "provides characteristics of a typical organization within a given segment, and the goals of that organization as a whole." A *Persona Ecosystem* is "an additionally refined organizational persona that uses business role personas to model typical, relevant, title roles within an organization, their relationships to each other, their tasks that relate to [the] company's concerns, and their roles in a buying decision." This level of detail provides "information about how role relationships impact decisions." "Buyers," "product users," and "influencers" or "stakeholders" are typical role persona groupings.

Note that Microsoft Research perspective on personas resonates with the idea of persona role since it implements an approach to systems design tailored by users' roles. For example, Miller and Williams [13] elaborated the so-called "MSF Agile Persona Template" with a *Role* slot "to place the user group in which the persona belongs." In this example, however, the notion of a "group" doesn't resonate with the notion of an "organization." It refers to a role type, e.g. "normal user" or "administrator."

F. 2010: Collaboration Personas

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The sixth and final explicit work to date about collective personas is a researcher's work by Matthews, Whittaker, Moran, and Yang [12]. The tools targeted by Matthews et al. are intended to support Collective Intelligence in organizations.

Collaboration personas are empirically derived descriptions of hypothetical groups of people with specific qualities, goals, and needs. They are grounded in multiple empirical studies and CSCW research literature. Collaboration personas are a super-structure that includes individual personas and describes their actions in the context of collaboration. Collaboration personas are inherently about interactions, and thus should describe the actions, decisions, and norms that have led to stable interactions.

Matthews et al. propose a framework—also named *Collaboration Personas*—for *(a)* helping users choose and adopt appropriate workplace collaboration tools and *(b)* design new collaborative tools that better meet the needs of typical groups. The framework describes distinct types of collaborations common to global companies used for large-scale efforts (communities of interest/practice and task forces) and small-scale efforts (traditional team-focused uses of collaborative tools). The main element of the framework is a set of dimensions or variables (also called "collaboration qualities") along which groups can be situated: (a) *a purposeful dimension* (SHARED ELEMENT: shared interest ↔ shared objective), (b) *a temporal dimension* (GROUP LIFESPAN: short-lived ↔ long-lived), and (c) *five compositional dimensions* (SIZE: small ↔ large; SUB-GROUPS: no subgroups ↔ many subgroups; PERSONNEL: stable ↔ dynamic; MEMBERS DEPENDENCY: interdependent ↔ independent; GROUP MANAGEMENT: self-managed ↔ designated leader).

Collaborative groups have dynamics, roles for individuals (e.g. regular member, super-team leader), and collaboration phases (e.g., Starting, Planning, Executing, and Reporting) that should be considered. Collaboration personas are supposed to make these various aspects visible and understandable.

Matthews et al. reported how collaboration personas might be applied to a core collaborative intelligence problem: supporting communities of practice with tools such as Lotus Activities (a tool helping teams organize their work, and tap their professional networks to help execute), Lotus Quickr (a "Team space" Web tool), and Lotus Communities (a Web tool helping people with similar interests or job responsibilities share information).

IV. COLLECTIVE PERSONAS: A COMPARISON

The works on collective personas can be compared along the dimensions which characterize the "collective persona" notion/artifact, and the method for building collective personas as described in the reviewed works. The comparison is just outlined here.

A. Comparing the "Collective Persona" Notions/Artefacts

A. Comparing the "Collective Persona" Notions/Artefacts

Persona name: The terms used to name collective personas focus either on the collective as an entity (e.g., "{group|organizational|collective} persona", "communitas") or on the activity performed by the collective (e.g., "collaboration persona").

Persona definition: Collective personas are defined either as personas belonging to a collective (see "organizational personas$_2$" and "persona ecosystem", "group personas$_2$") or as an entities composed of individuals (see "communitas", "collaboration personas").

Persona variables: The variables used to define collective personas are individual personas variables transposed to collective personas (e.g., goals), or variables coming from existing models of collectives, etc.

Collectives considered: Some works focus on specific collectives (e.g. families or groups of friends in group personas$_1$) while others cover a wider range of collectives (see collective personas and collaboration personas).

Realism of personas: The level of realism of the collective personas as entities varies among the presented works. However this level has not reached the realism level of individual personas.

B. Comparing the "Collective Personas" Methods

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Origin of the method: The methods originate from a practical need (e.g. group personas$_1$) or from a theoretical motivation, or a mixture of both (e.g., collective personas).

Aim of the method: Most of the methods aim at informing or supporting the design of explicitly collective tools (groupware, multi-user business system, intranets, Web 2.0 tools), or of individual tools that can be used within groups.

Availability and accessibility of the method: Some works proposed a method while others do not; when a method is

available, it is not always accessible. When accessible, the level of detail of the method description differs.

Degree of achievement of the method: The methods presented can be mainly considered as initial versions needing to be improved.

Place of the scenarios in the method: Most of the time, scenarios have a greater place in the methods; the main reason is that scenarios make explicit the interactions between the individual personas acting within a collective.

V. Collective Personas: Issues and Avenues

To conclude this literature review illustrating the emergence of the "Collective Personas" trend, we would like to synthesize some issues and avenues related to the development of collective personas.

Issues. We have seen that when trying to design collective tools, designers are faced with a double need: *(1)* to characterize the collectives for whom these tools are intended and *(2)* to get a method for doing such a characterization or modeling. This double need raises several *issues* (some of them have been identified by the authors quoted in this paper), e.g.:

- Do we need to elaborate collective personas or is it enough to develop the collective dimensions of individual personas (e.g., interpersonal or social relationships, roles, etc.), and/or to develop the collective scenarios related to individual personas acting collectively? This issue may arise in cases where the collective is extremely short-lived.
- What are the features/dimensions allowing to characterize collective personas realistically? Which features/dimensions can we transfer from individual personas to collective personas? For example, what kind of image can represent a collective: a collection of individual photos or a group photo?
- How can we account for the links between individual and collective personas? Can we attach the same individual persona to a user playing a role in collectives referring to two different collective personas?
- What kinds of scenarios can we attach to collective personas?

Avenues. The issues listed above, and many others, clearly need to be further explored. For this exploration, it would be beneficial to rely on modeling techniques coming from communities close to the HCI community, especially the User Modeling and Groupware/CSCW communities. For example, we could rely on: (a) *Models of "collectives:"* communities, social networks, groups, teams, families; (b) *Collective scenarios techniques*, an extension of individual scenarios technique; (c) *Group modeling techniques*, an extension to groups of the classical user modeling techniques dedicated to individuals. These techniques aim to develop "models of groups, collaboration and communities [which] collect and structure the rich information describing interactions between users" [7]. We are currently exploring these avenues.

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