Grouping Contacts for Information Tasks

Paul Holmes
Horizon Doctoral Training Centre
School of Computer Science
University of Nottingham
p.holmes@nottingham.ac.uk

James Goulding
Horizon Digital Economy Research
School of Computer Science
University of Nottingham
james.goulding@nottingham.ac.uk

Sarah Sharples
Human Factors Research Group
Faculty of Engineering
University of Nottingham
sarah.sharples@nottingham.ac.uk

ABSTRACT

Our daily information tasks are often completed with people in mind, but these significant associations are underexploited in the design of information systems. We report preliminary results exploring the nature of manually constructed contact groupings, to aid in the completion of information tasks by examining their creation, structure, and descriptions.

Categories and Subject Descriptors

• **Human-centered computing, Human computer interaction (HCI), Information Retrieval**

Keywords

Grouping; Information Tasks; Person-Centric Interfaces; Contacts

1. INTRODUCTION

The mental associations we make between people and information are important for the completion of our daily information tasks, whether they are sharing information, retrieving it, or managing aspects of it, such as privacy. These tasks are predominantly completed with some notion of person in mind [1], but as yet the valuable associations between information and people are yet to be fully exploited in the field of interface and systems.

To explore this area further we have created a prototype interface in order to examine two key questions: what information tasks might person-centred interactions improve support for; and what factors are important for organising, locating and presenting people within a person-centred interface? In this paper we focus on the latter question, examining the processes by which people group contacts together with a view to accessing, managing, and sharing information in relation to them. From this we draw implications for the design of interfaces centred on people.

2. PROTOTYPE AND METHODOLGY

The prototype created, as illustrated in Figures 1 & 2, is focused on making people the central component of interaction within the interface. It takes advantage of the associations between people and information that exist within communication data (in this case the data parsed from a user's email and Facebook accounts). The prototype firstly identifies people with whom the user regularly reciprocates contact; and then collates informational content related to those contacts. This allows the

interfaces to present all of this information in a *person-centric*, rather than date- or topic-centric manner. Once contacts have been automatically extracted, users can manually organise, order and categorize their contacts via the interface.

In the first part of our study 18 participants were asked to group each of the identified contacts, using two different interface designs (presented in a balanced order), in whatever manner they thought would be generally most useful for accessing their contact's data, or sharing information with them. The main differences between the two interfaces were that one involved simply selecting a group to assign contacts to (Figure 2), and the other represented the structure being created as a force-directed graph, and allowed the creation of sub-groups (Figure 1).
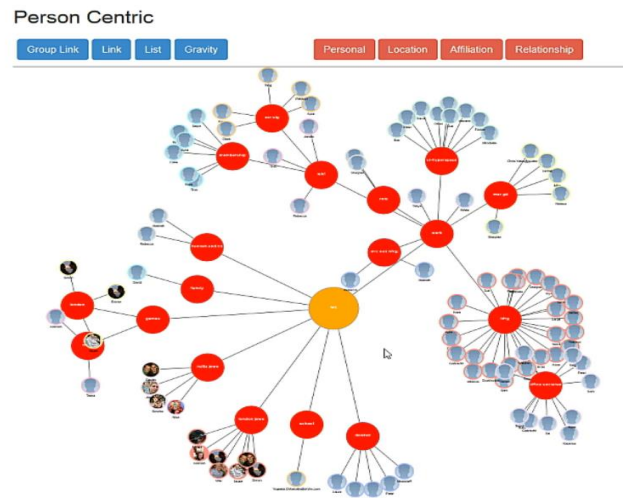

Figure 1. Force- directed Graph Grouping Interface.
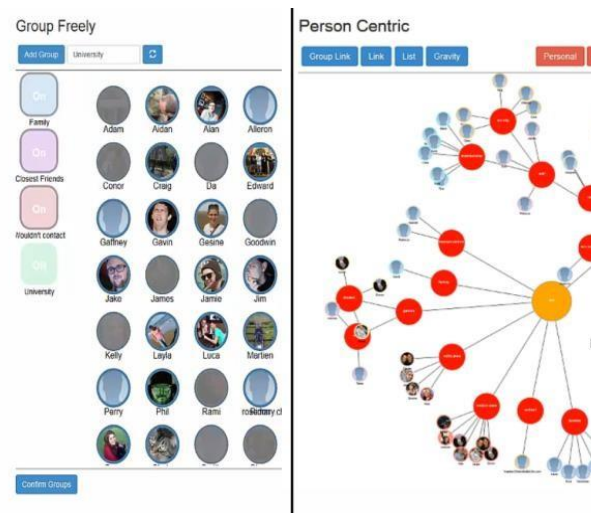

Figure 2. List Grouping interface

Screen capture was used to record interaction with the prototype as well as audio recordings of participants using a think-aloud protocol while performing the task. This data was then analysed to assess how categorisations emerged from the different forms of groups, and examining critical points in the grouping decision making process (for example, moments when the participant hesitated in what they were doing, and were consequently probed about it further).

3. GROUPING

Analysis revealed common types of groups created across multiple participants. Table 1 represents encodings of these groups at the broadest level of our analysis, and have notable similarities to those described by other grouping studies [2].

Table 1. Categorisation of groups created.

Category	Description	Percentage
All Others	*Characteristics, Events, Behaviours*	6.05%
Meeting	*Where contacts were first met. E.g. "Friends From Old School"*	7.05%
Interests	*Shared hobbies or interests. "Volleyball"*	8.05%
Location	*People in a geographic location. E.g. "Canning Circus Crew"*	10.40%
Relationship	*Type of relationship. E.g "Close Friends"*	31.55%
Organisational	*Organisational, affiliations, roles, and projects. "Supervisors"*	34.56%

While very different in general structure, the two grouping interfaces did not produce any significant differences in the categories of groups users generated. The force-directed grouping interface did however result in a significant increase of 26% more groups being created overall ($t(17) = 3.09$, $p < .05$) - the design of this interface, particularly its facility for sub-groups, and direct feedback about the structure of the groups, appears to encourage users to represent their mental model of contacts in greater detail.

While contact categorisation does indeed provide an indication of which relations with individuals are most important in recalling those contacts, the nature of the groups created were often more complex than this implies. Of the groupings 16% were multi-dimensional in nature i.e. the groups were named or described such that they sat between categories, invoking multiple dimensions to describe the group, e.g. "Nottingham Colleagues". While these were categorised according to what their primary intent spoke to – in this case *Organisational* – they could justifiably have been categorised in more than one group. Within

these multi-dimensional groups it is again the same top three factors that are most commonly combined – with a similar low distribution through the remaining categories. The location, form or intimacy of relationship, and organisational role or affiliation, appear to act as the most important filters for describing specific sub-sets of people.

Interviews also highlighted, however, the importance of the strength of the associations with a contact. This meant that participants did not always group contacts according to their present circumstances, but would also invoke past and occasionally also anticipated future associations in group construction. For example contacts who were known in one city, but subsequently moved away were often grouped as belonging to the original city due to the strength of the original association. Indeed, where people first met emerged as being particularly important in determining group identities, as was who they were met through, albeit less frequently.

Groups also appeared to reveal some distinct underlying structures. At the two extremes seemed to be groups that were cognitively stable in nature and, in contrast, groups that were inherently amorphous. The cognitively stable groupings represented very specific and constant social structures such as "family", a specific "friendship group", or a specific group of colleagues that changed little in membership or nature. By contrast amorphous groups represented one of multiple convenient ways of filing people, with whom a multitude of subtle relationships existed. These groups focused around common attributes rather than formal social structures, such as "Administrators", or a common catch-all group "Friends".

These initial results identify some common behaviours in the interrelated aspects of the creation, structure and description of contact groups. Continued experiments are now leading to implications for automatic group detection and design values for person-centric interfaces.

4. REFERENCES

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