Case-Based Reasoning for Supporting Life Counsellors

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Abstract. In this position paper we sketch a project dealing with life counselling. The goal of the project is to develop a tool which will help life counsellors to document their life counselling knowledge, to reuse and further develop this knowledge, to share it with other life counsellors, to interact with the system as well as different expert user groups, and to formalize and continuously improve the general and the case-specific knowledge. We present different aspects of the project and mention the research challenges.

1 Introduction

Life counselling is concerned with the welfare of human beings, more precisely the thinking, feeling, acting, and also the faith of persons. Life counsellors help people deal with their problems and conflicts. They conduct several counselling interviews with the consulters. The main idea is to help people help themselves by having several discussions with them, give them multiple views on their problem and give them basic hints. Life counsellors for example give exercises, which are part of a counselling method, to counsulters after an interview. During the following interviews, they try to find out, whether it helped the patient or it should be changed. In order to do that, counsellors themselves mainly rely on their experience in the domain, but also on the methodic knowledge they learned during their formation. Communication between life counsellors plays an important while acquiring experiences. Most of the time they are grouped in small

communities to share their experiences. As they do not only build on self-made experiences but also on those from others, they often rely on peer consulting and supervision to critically analyse past cases (and be able to learn from them). Further they contact other colleagues when they need help in an actual or past counselling case. Such help might comprise a whole counselling case or just information about parts or aspects (e.g., the method or exercise that can be used in a given situation) of life counselling. Our goal is to provide a system that can be used to help life counsellors in their work. We want to provide a decision support system that should also comprise the community aspect mentioned earlier, that is, the system should reflect the peer consulting and supervision aspect. The counsellors should have the possibility not only to share their experience, but also to learn about new cases from others and be able to find hints and references (e.g., to counselling methods) while looking for help (when they deal with a given case). We will in the next section shortly present the different aspects and challenges that need to be considered in order to develop such a tool.

2 Challenges

The main goal of the project is to provide life counsellors a platform where they can share their own experiences and learn from others by exchanging counselling cases. The knowledge contained in the developed system should reflect the one needed and used for life counselling. The main challenge is that life counselling knowledge (experiences as well as general knowledge) is very hard to apprehend. Opinions about cases can differ from counsellor to counsellor and the general knowledge on life counselling is far from being well defined. We thus have to find a way to incrementally develop the knowledge required in the system in interaction with several life counsellors. By this, we want to be able to incrementally increase the sustainability of the knowledge base.

Because they often rely on the collected experience in their work, the system should be able to deal with analogy. We will thus mainly rely on CBR as the knowledge processing technique. With CBR, we will be able to offer a similarity based search (for counselling cases and counselling methods). We also want to use CBR to incrementally formalise weakly structured real life domains (using the example of the life counselling domain).

Another challenge for the project concerns the knowledge formalisation. On the one side we have to formalise the knowledge needed in this application domain before we can start the building of a knowledge base. The knowledge available in the life counselling domain is often unstructured and highly context dependent. On the other side the experience of the counsellors is often available in form of notes made after meetings. These notes are highly unstructured, because there is not a standardised format for counselling cases. We need here a knowledge based information extraction approach to deal with it.

The formalisation of the knowledge would be helpful in several ways. First we want to develop a standard vocabulary, so that the counsellors can easily share their knowledge. Second, we want to have a description of the case which is as

detailed as possible, with the goal of being able to compute the similarity between the cases as exactly as possible. The formal description of cases also lead the counsellors towards a standardised documentation of their own cases. This formal representation has to be extended to the other aspects of life counselling (e.g. counselling methods) that we should consider. All the points have to be done in interaction with the experts. Of course the formalisation can not be done in one step, but this is something that has to be developed incrementally. As mentioned earlier, the interaction with life counsellors is crucial. We also intend here to use CBR on different levels of the formalisation and different modes of interaction with the experts. CBR approaches would be very helpful for these tasks.

Another aspect to consider is the community aspect. The intended community does not only comprise practising counsellors, but also the ones still in training. Depending among others of this distinction, we have to consider quality aspects. We want to make sure that only verified knowledge is available for the system The most important thing to manage here is the validation (also in interaction with experts) of the knowledge base. We for instance have to make sure that an opinion mentioned in a case is justifiable. We thus have to find approaches for knowledge validation for highly unstructured domains.

3   Current Status and Outlook

We are actually working on a consistent format for life counselling cases and are applying it on real life examples (i.e., counselling cases). We are also finding out which others aspects of life counselling (besides whole cases) are important for life counsellors and are worth for the development of a knowledge base. Further steps include integrating different approaches for incrementally developing different knowledge-based systems (agents) based on weakly structured and less formalized knowledge sources (experiences and general knowledge), intensive user interaction, different kinds of expert communities, as well as learning from feedback.