

Practical Reasoning Using Values^{*}

Giving Meaning to Values

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Abstract. Each person holds numerous values that represent what is believed to be important. As a result, our values influence our behavior and influence practical reasoning. Various argumentation approaches use values to justify actions, but assume knowledge about whether state transitions promote or demote values. However, this knowledge is typically disputable, since people give different meanings to the same value. This paper proposes an argumentation mechanism to argue about the meaning of an value and thus about whether state transitions promote or demote values. After giving an overview of how values are defined in social psychology, this paper defines values as preference orders and introduces several argument schemes to reason about preferences. These schemes are used to give meaning to values and to determine whether values are promoted or demoted. Furthermore, value systems are used for practical reasoning and allow resolving conflicts when pursuing your values. An example is given of how the new argument schemes can be used to do practical reasoning using values.

1 Introduction

People evaluate and select behavior that maximizes harmony with their values [1,2]. When arguing about what to do, values are used to motivate actions. Recent research [3,4,5] investigates the role of values in argumentation. However, the concept of values is considered to be ambiguous [6,7]. For example, some consider values as goals [2], others as attitudes [8]. One of the aims of this paper is to define the concept of values clearly and to show how it relates to goals as used in the agent literature.

Existing approaches [3,4] assume a function that determines what values are promoted and demoted given a state transition. For example, dropping a friend off at the airport promotes friendship. Whether a value is promoted depends on the meaning that is given to a value. However, what meaning should be given to a value is often disputable [9] and is subject to argumentation.

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This paper proposes several argumentation schemes to argue about the meaning to be given to values. Our running example in this paper is a dialogue where values play a significant role. In this dialogue, the values *health* and *fun* play a role. This dialogue is used to illustrate that argumentation concerning values is needed.

Example 1. Consider the following dialogue between A and B:

A1: You should exercise twice a week because it improves your health.

B2: Why is it good for my health?

A3: Because exercise improves your stamina.

B4: But then I might as well go to work by bike.

A5: No, exercising is better for your health.

B6: But exercise is boring.

A7: What is more important: your health or having fun?

B8: I find my health is more important. I guess I should exercise.

In moves A1-A3, we can see a discussion about whether exercise promotes the value of health, which allows B to propose to bike to work in B4. If more aspects of being healthy are considered, the meaning given to the value of being healthy becomes more concise. This allows comparing states from the perspective of a value as seen in move A5. Finally, B6 shows that one cannot always promote all values and priorities between values can be used to solve such conflicts in B8.

This paper is structured as follows. In Section 2, we will illustrate the concept of values by giving definitions of values from social psychology and arguing how values relate to goals as used in the BDI literature. In Section 3, the concepts of perspective and influence between perspectives are introduced. Perspectives are aspects over which an agent may have preferences. Perspectives and influence between perspectives are used to define values. Furthermore, we show how these definitions relate to existing work. Section 5 applies the introduced argument schemes on the running example and we will end the paper with conclusions and future work in Section 6.

2 What Are Values?

The concept of value is considered ambiguous and efforts have been made to clearly define it [6,7]. However, there is a consensus on five common features of values [10]: values are (a) concepts or beliefs, (b) about desirable end states or behaviors, (c) that transcend specific situations, (d) guide selection or evaluation of behavior and events, and (e) are ordered by relative importance. These features have been incorporated by the Schwartz Value Theory (SVT) [2], which is based on [1]. We will use the SVT because it is seen as the state-of-the-art value theory [6].

Values are defined as *desirable trans-situational goals, varying in importance, that serve as guiding principles in the life of a person or other social entity* [2]. This definition will be the basis for our formalization. In the remainder of this section, we will summarize the SVT and compare it to the concept of goals as used in the BDI literature [13,14]. In section 3, we will define values formally.