Psychometry Ontology - Annotation

Mine Öğretir

Suzan Üsküdarlı

Abstract

The theory of values indicates that people have common universal value dimensions. These values determine the behavior of people, their comments on events, motivation sources and goals. At the point where we communicate with the world, our expressions put forward our priorities. In addition, it has been shown that the compatibility of values with life is important for a good life, and the adaptation of the person to current state of the life is important for a good life. This model allows to annotate resources in order to explore the interaction of individuals and groups with values and understand behavioral dynamics to predict or explain behaviors.

Keywords: Scwartz's Theory of Basic Human Values, Annotation, Linked Data

1. Introduction and Motivation

The Value Theory aims to determine the universal values of people. A value is a 1) beliefs, which are bind to emotions 2) motivational goal, related to desirable end states or modes of conduct, that 3) transcends specific actions and situations, an abstract goal 4) guides selection or evaluation of behavior, people, action, policy, and events, and 5) is ordered by importance relative to other values to form a system of value priorities [1, 2]. The values are as follows:

1. Self-Direction. Independent thought and action; choosing, creating, exploring.
2. Stimulation. Excitement, novelty, and challenge in life.
3. Hedonism. Pleasure and sensuous gratification for oneself.
4. Achievement. Personal success through demonstrating competence according to social standards.
5. Power. Social status and prestige, control or dominance over people and resources.
6. Security. Safety, harmony, and stability of society, of relationships, and of self.
7. Conformity. Restraint of actions, inclinations, and impulses likely to upset or harm others and violate social expectations or norms.

8. Tradition. Respect, commitment, and acceptance of the customs and ideas that traditional culture or religion provide the self.
9. Benevolence. Preserving and enhancing the welfare of those with whom one is in frequent personal contact (the 'in-group').
10. Universalism. Understanding, appreciation, tolerance, and protection for the welfare of all people and for nature.

Values relate to the needs of individuals as biological organisms, the requirements for a well coordinated social interaction, and for proper functioning and survival of groups. These are considered as the three universal needs of individuals and societies.
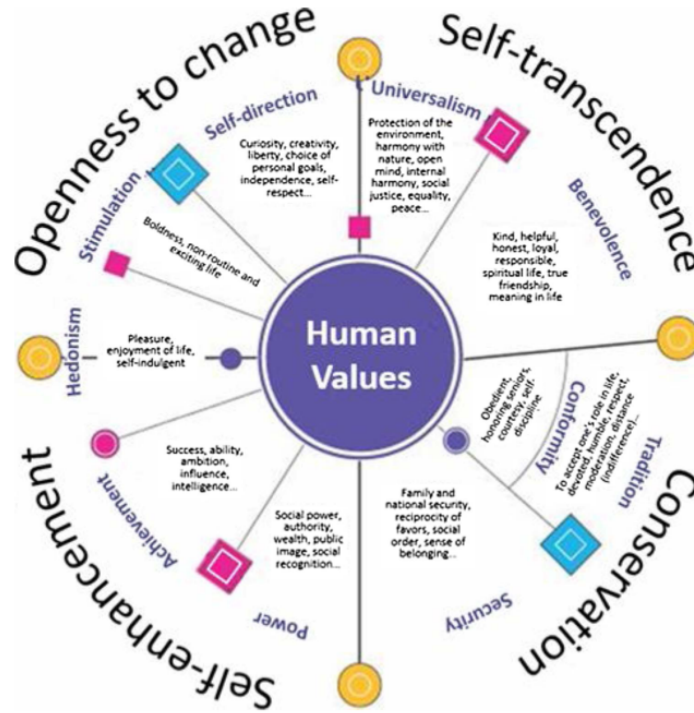

Figure 1: Structure of Schwartz's (1992) theory of basic human values[3]

Figure 1 shows the relations of values relative to each other. The values in bipolar coordinates are mostly the conflicting ones. On the other hand, the neighbours are more positively related to each other. For example, an individual, whose security value is high, her stimulation value is expected to be low as stated in the opposite direction. Values influence attitudes and behavior. For example, Figure 1 shows the relevance of values and positive attitude toward freedom of life-styles for gay people[2].

There are various application areas of the value theory, where one of them is predicting behaviour of people. In another view of working on the dynamics
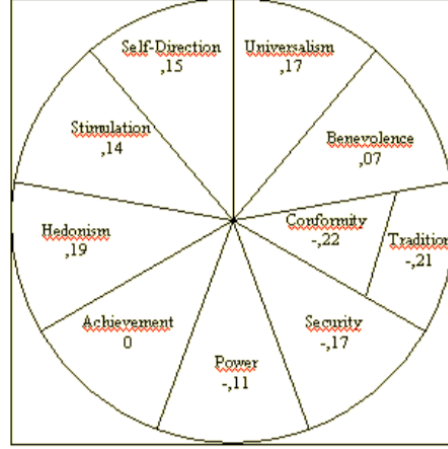
Figure 2: Correlations between the values and positive attitude toward freedom of life-styles for gay people[2]

of behaviour is explaining an individual's behaviour. Even though we think that we are aware of our thoughts, behaviors and judgment criteria, it is not the case most of the time. Evaluating a behaviour in terms of value system, an individual can monitor herself/himself in order to improve and adapt to the current circumstances.

1.1. Predicting or Explaining Behavior with Basic Values

Value priorities may influence behavior in systematic, predictable ways [2].

- *Value activation.* Activated values affect behaviors. Higher priority values are more easily accessible and can be activated more rapidly.

- *Values as a source of motivation.* The actions that may lead to high priority goals, which are related with high priority values, would be more attractive to an individual.

- *Influence of values on attention, perception, and interpretation in situations.* High priority values lead people to seek and participate in aspects of a situation that are relevant to this value.

- *Influence of values on the planning of action.* More important goals create a stronger motivation to make comprehensive planning. The higher the priority given to a value, the more people will create action plans that can lead to their expression in behavior.

In the light of these characteristics, we can offer an attempt to explain the behaviors of the individuals, or we can offer more personal recommendations by estimating the behavior and tendencies of the people using the data that can be annotated through the model given in Section 2.

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The main motivation points on annotation about values can be sum up as follows, which I will not go into detail of each one of them:

- Extracting semantic relation of artifacts, events, concepts,

- Annotating events as value triggering points,

- Annotating concept/value relations,

- Annotation motivational goals,

- Self-annotation on personal conflicts,

- Personal monitoring,

- Cause and effect relations.

In my project, I created an ontology for the purpose of scoring artifacts, which are any verbal content of an individual, such as opinions, news, blogs, speeches etc. The diagram of the ontology is given in Figure 2.

2. The Model

In my preliminary model, I created a model in order to annotate three relevant information:

- Annotating the artifacts for the relevancy of Values as were drawn in Figure 3. The artifacts would be annotated according their values in scale of Low, Neutral, High or in scale of 0-8. This information gives the value scores of the author in the context of the artifact.

- Annotating the artifacts, according their triggering events as in Figure 4. The point in this annotation is that every artifact has a motivation related to an event. This event can be a social event or a personal event or situation. The aim is to bind the artifacts with the actions, events, changes in the states of the world.

- Annotating concepts according to related value as in Figure 5. As stated in [2], some concepts are more relevant to particular values and they can be triggering for some values and the individuals who have high priority for this value would be triggered more easily.

Annotation1 as an example is defined as follows:

```
<http://www.PsychometricProfiling.com/annotation_1>
      a oa:Annotation ;
   oa:hasBody [
      a psymet:Scoring ;
      rdf:value "High" ;
      psymet:isAScoreOf psymet:Power ];
```

```
oa:hasTarget <http://www.PsychometricProfiling.com/
    article_1> ;
oa:motivatedBy oa:assessing ;
dcterms:creator <http://www.PsychometricProfiling.com/
    person_1>
dcterms:created  "2019-01-01T02:00:00Z" .
```

The namespaces I used are listed in Table 2. Examples of an activity and article instances from Activity Streams vocabulary, would be used in this project, are given below:

```
ACTIVITY EXAMPLE
{
  "@context": "https://www.w3.org/ns/activitystreams",
  "type": "Activity",
  "summary": "David Brooks wrote an article",
  "actor": {
    "type": "Person",
    "name": "David Brooks"
  },
  "object": {
    "type": "Article",
    "name": "2019: The Year of the Wolves"
  }
}

ARTICLE EXAMPLE
{
  "@context": "https://www.w3.org/ns/activitystreams",
  "type": "Article",
  "name": "2019: The Year of the Wolves",
  "content": "<div>... The horses took off and the wolves
  attacked. ...</div>",
  "attributedTo": "https://www.nytimes.com/2018/12/31/opinion/
  trump-indictment-2019.html"
}
```

3. Social and Semantic Characteristics

This model adds a semantic, value dimension to various things, like people, events, artifacts, concept etc. Values are a latent dimension in the dynamics of social/personal behaviours. This dimension may help to extract more explainable network characteristics in a society. Since the theory of basic human values
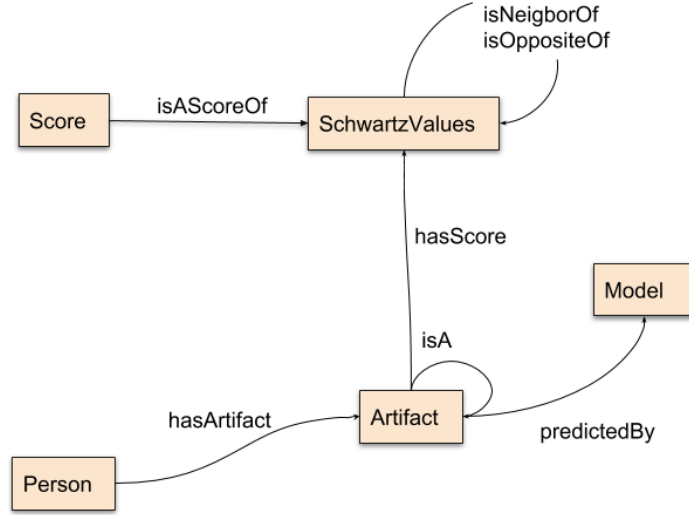
Figure 3: Diagram of Psychometric Profiling Ontology

Prefix	Namespace
oa	http://www.w3.org/ns/oa#
as	http://www.w3.org/ns/activitystreams#
skos	http://www.w3.org/2004/02/skos/core#
rdf	http://www.w3.org/1999/02/22-rdf-syntax-ns#
dcterms	http://purl.org/dc/terms/
psymet	http://www.PsychometricProfiling.com/psymet (Not Ready)

Table 1: Used Namespaces

Prefix	Description
oa	The Web Annotation Data Model
as	Activity Vocabulary
skos	Simple Knowledge Organization System Namespace
rdf	RDF Schema
dcterms	Dublin Core Metadata Terms
psymet	Psychometric Profiling Ontology

Table 2: Used Namespace Descriptions

relates to the idealistic goals and states that the values guide selection or evaluation of behavior, people, action, policy, and events, it is plausible to expect to find the similar people in terms of value priorities in the same community clusters.
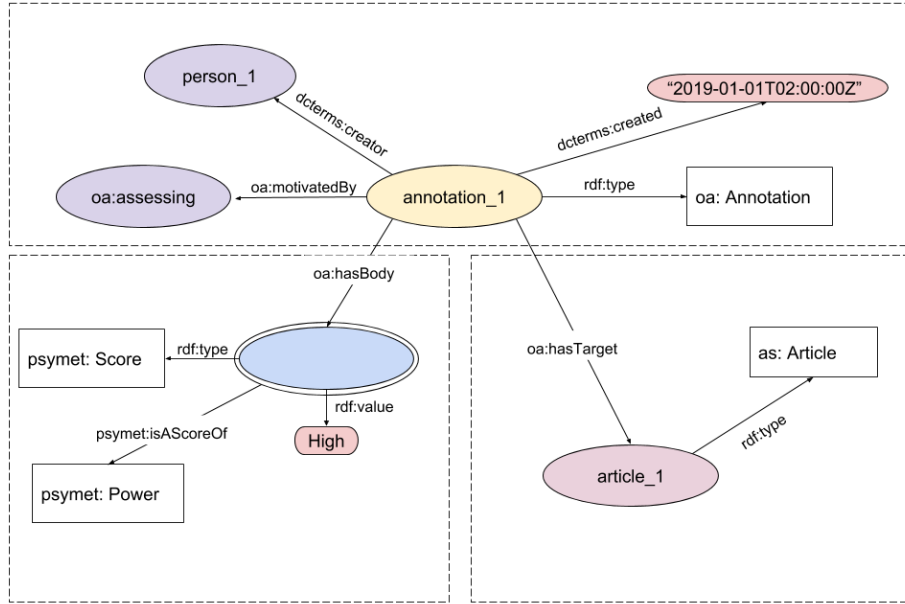
Figure 4: Annotation of Articles

4. Example/Use Case

In this section, I will look at some of the use cases of this model. When we consider this model in a mature state, we would have at least the following information:

- Creators of the artifacts,

- Artifacts and their value scores,

- The triggers of the artifacts, that is what are they related to,

- The concepts and their relations to values, if any.

We can deduce to the author profiles in terms of value theory. On the other hand, this is just a part of the information we have in hand. When we connect the semantic data, we can come up with much more information, that will increase the effectiveness of our model. For exxample:

- The interest areas of the people/authors,

- The most interested values of the people/authors, without scoring,

- The most interested values of the people/authors, with scoring,

- The concepts that an individual might be interested in terms of values,
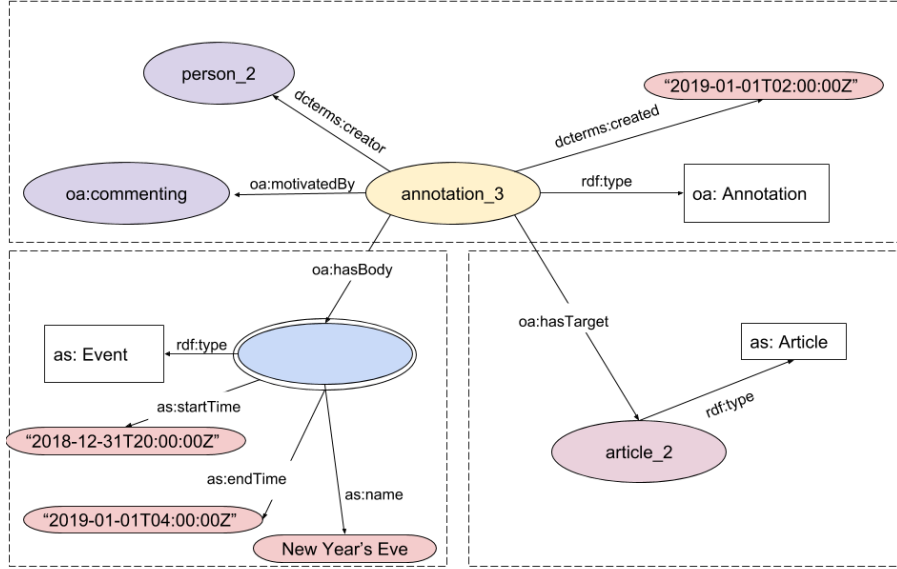
7

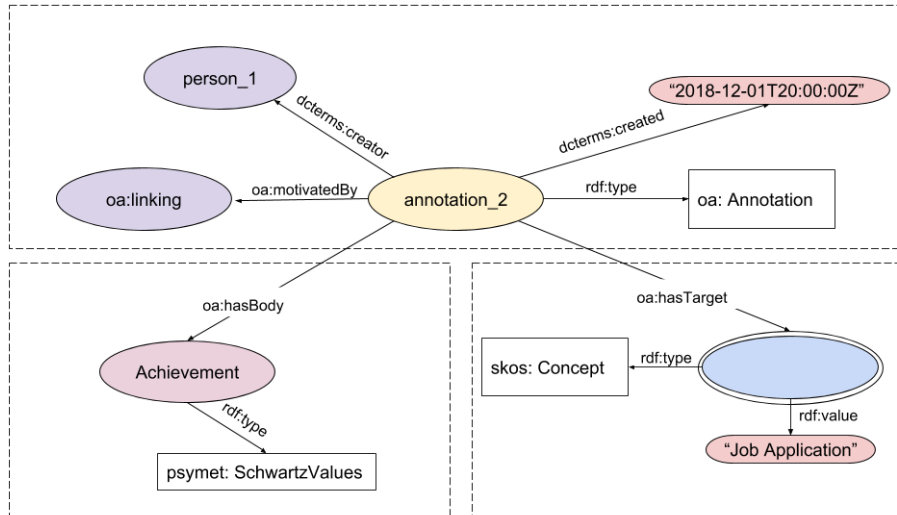Figure 5: Annotation of Article Triggers

Figure 6: Annotation of Schwartz Values

- The value triggers in terms of events,

- An analyze of an event in terms of the effected value among the society,

For example, let us consider an columnist, who normally has a tough and aggressive style. However, when we look at the articles about the new year, we may see that she/he is more calm and with good and hopeful messages. When we gather this relations among many individuals, the events would have their own value profile. This would facilitate to approach to values in two points of view, one is the one that deals with the subject / event / activity and the other one is deals with the authors. When we combine this information, our model will not only extract the psychometric values of the authors according to the articles, but also the psychometric values of the events or activities. Together with this information, we can examine how the activities in our hand affect the social structure.

Another information we can collect is the effect of an event among different social groups in the society. The same event would effect differently a group with high power value, than a group with high stimulation value. We can extract this refection among the individual's profiles and the artifacts related to an event. A system that we can monitor this effects would provide valuable information.

5. Discussion

It is not difficult to see that it is not easy for people to evaluate facts, events and texts through the value system. But as this approach becomes more widespread, thinking about a common annotation platform will enable people to be more aware and knowledgeable about these values.

It is not possible to fully understand or predict people's behavior from just one dimension. Considering that many factors affect the behavior in a complex manner, it is not possible to fully understand the behavioral structure through values alone. However, we can see from experimental results that it is possible to make comments and predictions[1, 2].

Adding value semantics in the dynamics of social life, may also facilitate to make more clear the conflicts that every individual encounters. Being aware of the reasons of behaviors and conflicts makes easier to cope with them and increases the well-being.

6. Conclusions

Assessing social events and people through value systems can provide a more meaningful assessment of the behavior of both individuals and social groups. As stated in [4], the value status of people effect their well-being and adaptation to the current circumstances has a high effect in subjective well-being.

7. References

[1] S. H. Schwartz, Are there universal aspects in the structure and contents of human values?, Journal of social issues 50 (1994) 19–45.

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