KOMEGA REQUIREMENTS:
Start with a Political Program
Version V4
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Abstract

Applying the original P-V-Pref Document structure to real cases it became clear that the everyday logic behind the classification of facts into *problems [P]* or *visions [V]* follows a kind of logic hidden in the semantic space of the used expressions. This text explains this hidden logic and what this means for our application.

1 Actors, Expression, and the Real World

To be able to talk about *problems* P and *visions* V one has to clarify the context of talking.

Actors, Real World, Expressions: In this text it is assumed that there are some *actors* A living in some part RS of the *real world* RW, $RS \subseteq RW$ and these actors are using an *everyday language* L realized by *expressions* E related to this language L.

Meaning: These expressions E are with the aid of some *internal meaning function* μ related to some internal states called *concepts* C, written as $\mu : E \longleftrightarrow C$. Cognitive concepts C are representing *cognitive facts* F^C.

Truth: Some of these internal cognitive facts F^C are related to some assumed *real facts* F being part of the real world $F \subseteq RW$, some of the internal cognitive facts F^C are not related to real facts F. To be able to decide whether cognitive facts F^C are actually belonging to real facts or not a *cognitive truth function* τ^C is here assumed which does this work: $\tau^C : F^C \times \kappa \longmapsto \{F^{C,r}, F^{C,p}\}$. The factor κ denotes some internal cognitive criterion which enables such a decision, and the expressions $F^{C,r}, F^{C,p}$ denote those cognitive facts which are assumed to be associated with real facts F or not. The *possible cognitive facts* $F^{C,p}$ can internally be classified to become real cognitive facts $F^{C,r}$ in some *future* associated with some *probability* π that this could happen.

Classified Meaning: While the normal (internal) meaning function μ can map expressions E of an everyday language L into cognitive concepts C which are related to cognitive facts F^C, the internal cognitive truth function τ can decide which of these cognitive facts F^C are actually related to real facts F and which are not. In this text a meaning which is decided as being associated with real facts or not is called a *classified meaning*: $\tau(\mu(e)) \in \{True, False\}$ with $e \in E$ tells us that an expression e receives a meaning by the meaning function μ identifying some concepts C with their cognitive facts F^C and these are classified by the truth function τ whether these cognitive facts are actually associated with real facts F or not.

Preferences: In our application scenario we can observe so-called *preferences* manifested in the behavior of actors. It is assumed that every single actor $\alpha \in A$ holds some *Preferences* $Pref$, which are understood as *pairs of expressions* (v, r) where the expression v is representing *cognitive facts* which are not actually associated with real facts F – written as: $\tau(\mu(v) \subseteq F^{C,p}) = False$ – and expressions r representing *cognitive facts* which are actually associated with real facts – written as: $\tau(\mu(r) \subseteq F^{C,r}) = True$ – . This can be written as follows:

$$Pref_{\alpha \in A} = \{(v, r) | \tau(\mu(v) \subseteq F^{C,p}) = False \,\&\, \tau(\mu(r) \subseteq F^{C,r}) = True \,\&\, v >_\alpha r\}$$

Preferences *located* in some *real actor* $\alpha \in A$ as a pair (v, r) enable in the actor a kind of *ranking* stating that the expressions v should be higher rated $>_\alpha$ than the expressions r. And because these expressions are further related to cognitive concepts and cognitive facts this enables an individual actor α to show an observable habit *preferring* the *substitution* of the real cognitive facts $F^{C,r}$ by the *possible, but not yet real* cognitive facts $F^{C,p}$.

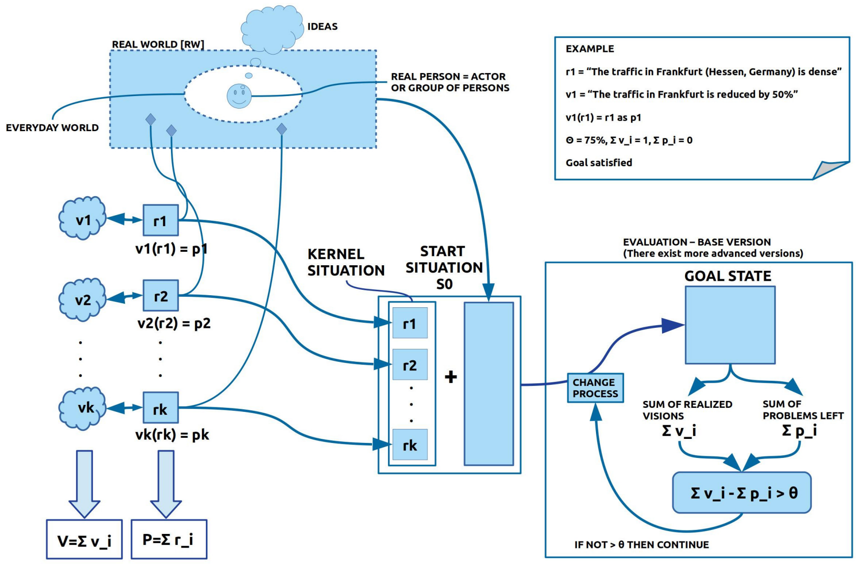

Figure 1: Generate preferences for a change process

Example 1: Assume there is an actor α being a citizen of the city Frankfurt in Hessen, Germany. If he is looking to the traffic in Frankfurt he can easily observe that the expression e1 $=$ *The traffic in Frankfurt is dense* is true. And there is some chance that this citizen can imagine a possible state expressed by e2 $=$ *The traffic in Frankfurt is reduced by 50%*. And it is conceivable that this citizen generates a preference like this v=$\{$e2$\}$ $>_\alpha$ r=$\{$e1$\}$. Having done this the fact represented by the expression e1 can be declared a *problem* P based on his *vision* V represented by the expression e2.

2 Political Citizens

Equipped with the before introduced concepts one can outline a model of *political communication* between citizens which eventually can enhance the *rationality* of acting inspired by thinking.

A Given Situation: At every point of time real citizens – here considered as real actors – are always embedded in some real part RS of the city RW. Usually they are able to describe properties of their real environment with some expressions E of the everyday language L they are using. Let us call such a collection of finitely many expressions a *state description* or simply a *state* S.

Generate a Preference: (cf. for this figure 1)

It is further conceivable that each of these citizens is able to imagine some ideas in his head which can be communicated with expressions E_{α}^{V} telling that these expressions describe for him/ her/ x some ideas which are *not yet real*, which are not yet part of the state S – which one can call a *vision* V –. Visions can trigger some follow-up actions to change the actual situation into a situation, which approaches as a real situation the before identified vision. But visions as such must not necessarily change something. In the actual setting we assume, that a vision will only be announced if the bearer of the vision wants to apply the vision to his reality. To do this the owner of the vision has to locate his/ her/ x vision in some *space* R (region, county, city, ...) and into some *time-frame* DT, within which the change should happen. Furthermore the intention of change should be rooted in certain parts of the *everyday reality* which either *exist* (r1='My street is very noisy', r2='The CO2 output in the city is much to high',...) or which are *absent* (r3='There are no places to meet other people in our part of the town', r4='There is no medical service in our town', ...). The important point is that an expression e as such describing some *reality* r is not a *problem* P, but such an expression e can *become a problem* if there exists a vision in relation to some identified reality r which classifies this kind of reality r as a problem, written $v(r) = p$. From this we can derive the concept of a *preference* as follows: A single preference is a pair (v,r) where v and r each represent a set of expressions. While the v-expressions encode some visions, the r-expressions encode some given reality. Let us call the r-expressions the *real* part of a preference and the v-expressions the *vision* part. If you have more than one preference like $VP = \{(v,r)_1, (v,r)_2, ..., (v,r)_k\}$ then all the real parts together $S_{kernel} = \sum r_i$ built up a problem space P, which should be used as *kernel situation* S_{kernel} as part of the *start situation* S_{start} for a possible change process. Usually the start situation is much larger than the kernel situation – $S_{kernel} \subseteq S_{start}$ – because you will usually not change *everything* but only some *identified problems* as part of your everyday world. Analogously represents the sum of the individual visions $V = \sum r_i$ the guiding vision for a change process.

A Political Program: If citizens will start to write down sets of preferences $VP = \{(v,r)_1, (v,r)_2, ..., (v,r)_k\}$ we can understand this as a first rough outline of a *political program*. A program can shed some light what should be changed and into which direction it should be changed. But a program usually does not yet tell you *how* this change can happen in detail.

Planning Change: Seriously minded citizens will not be satisfied to have only a first political program; they want that this program *will become real*. To enable this one has to develop a *plan* how one possibly can proceed from some *given real situation*, the *initial state* S_{start}, to some *envisioned state in the future*, the goal state S_{goal}. Basically this means that one constructs a finite *chain* *of states* or *sequence of states* $\langle S_{start}, S_{start+1}, ..., S_{goal} \rangle$, where the *transition* from one state S_i to the follow-up state S_{i+1} is described by a set of *change rules* X.

3 The komega-SW

To do real planning based on a political program is'nt really easy. But with the aid of an appropriate *software [SW]* this can be achieved much easier. For this together with a really inspiring team I am developing not only a theory (this actual text is part of this theory) but also a software with the working label *komega-SW*. What can this komega-SW do for you as a political minded citizen?

Install Your Political Program: (See for this figure 1) As you can imagine from the preceding paragraphs you must start with some friends to define a political program consisting of a set of preferences. Having done this you have to extend your kernel state S_{kernel} to a *start state* S_{start}. If your political program is an ambitious program then it can make sense that you generate in the beginning several kernel states $\{S_{kernel,1}, S_{kernel,2}, ..., S_{kernel,k}\}$ and extend each kernel state to a separate start state getting a set of different start states $\{S_{start,1}, S_{start,2}, ..., S_{start,m}\}$. The komega-SW allows the citizens to develop as many as necessary start states in parallel. On demand it is possible to unify these different start states later.

Change Process: The next step is to generate for each start state a set of change rules $\{X_1, X_2, ..., X_m\}$. As in the case of the start states it is possible to unify sets of change rules on demand. Thus if you want to investigate how a unified start state $S_{start,i} \cup S_{start,s}$ will develop with the unified set of change rules $X_i \cup X_s$ then you can do this. During the change process you can at any point of time pose the question, whether the actual state is already a *goal state* G. The answer would be yes if the number of expressions which have been classified in the presence of a vision as *problem statement* $P = \sum p_i$ and the number of expressions which have been classified as *vision statements* $V = \sum v_i$ show a difference $\sum v_i - \sum p_i > \theta$ which is bigger than some before agreed threshold θ. If the actual state is not yet a goal state then you can continue the as long as there is still some hope to reach the goal in the future.

Continuation: This text describes only some part of the komega-SW. If You want to know more have a look to the komega-SW homepage at uffmm.org.