Making Use of Anarchy in Systems Development

Position Paper for Dagstuhl-Seminar „Social Thinking – Software Practice“
(Sept. 5th-10th, 1999)

Ralf Klischewski

University of Hamburg, Department for Informatics

klischewski@informatik.uni-hamburg.de

This paper presupposes that systems development is most successful when the actors participating are not limited in the way of relating their professional work to all the social aspects relevant for systems development projects. The following is to overcome some limitations of thinking...

1. Software Practice

Software practice embraces technical as well as social aspects. Here, I am concerned with how software projects are related to social aspects of the user's world and not with, e.g., how programmers interact in a team or how social thinking may inspire the art of software development in its technical dimensions (although, it might be worth discussing 'eXtreme Programming' in the context of anarchy...). Thus, I would like to restrict my notion of 'software practice' to activities centered around relating to the application context emphasizing the social interaction, e.g.: "systems development consists of those activities which aim at changing an organization through the use of computer technology." (Andersen et al. 1990)

However, talking about words, meanings, and perspectives is the work of science. In practice, the project work needs to be done regardless of any scientific distinction between software, system, or organizational development. Software experts are involved in all of these areas (not the least because of other actors often do not take up responsibility for the aspects of social development). Therefore, reflecting of and educating for software practice, based on scientific analysis, needs a broad view without excluding any perspectives on the social a priori.

2. Social Thinking

Traditionally, the science behind software practice is computer science, the source of solutions for all engineering problems related to the construction of hardware and software. There are other sciences around (e.g., informatics, information science, management science) abstracting somewhat from the technical engineering and putting more emphasis on analyzing use aspects as well as recommending methods and procedures for systems development. In all these sciences, the mainstream acknowledges systems thinking as a kind of meta-theory for systems development. Even the work of Checkland (1981), "derived from a decade of action research" (cf. book cover of 1989 edition) and being very critical with "hard systems thinking", holds to the point that there is the real wold (practice) and systems thinking (science) – and that it is the task of the developer to

establish an adequate relation (e.g., by using soft systems methodology). On the other hand, the social sciences provide us with so many more ways to think about the social – how can we enhance the richness of reflection without weakening the intellectual foundation of systems construction?

3. Position

- We need systems thinking to develop any kind of computer supported system (software practice).
- We need not only a (pragmatic) relation between system thinking and social practice, provided by methodologies, but also a (theoretical) relation between system thinking and (any other kind of) social thinking, provided by an enriched meta-framework for computer science and/or related sciences.
- I suggest to move from a monistic to a dualistic "Weltanschauung": there are systems – and there is anarchy (see below).
- I believe that the intellectual space opening up by relating 'systems thinking' and 'anarchy thinking' can embrace all or at least most of the dimensions of reflection and threads of discussion already introduced in the debate on social aspects of systems development.

4. Anarchy Thinking

There is a considerable amount of scientific work on anarchy and anarchism. But unlike 'systems thinking', the term 'anarchy thinking' has not been introduced and discussed in scientific literature (only, there had been a noticeable epistemological debate on the "anarchistic theory of knowledge" of Feyerabend, 1975). In this paper, I can only outline some key elements of 'anarchy thinking' from my point of view (cf. Klischewski 1996):

- *values and emotions:* you love it or you hate it – anarchy is either the social paradise to strive for (e.g., attributed with social equality, total freedom for self-determination, social organization without claims to power), or the social hell on earth to fear (e.g., violence everywhere, total chaos, no responsibilities, etc.). In contrast, reflecting on systems is almost soporific...
- *subjects and activity:* since 'system thinking' is abstract (i.e., not bound to any real world domain a priori), the system modeler is free, e.g., to include humans or machines on the same level as instances to carry out some action. In anarchy thinking, only humans act as individual or collective social actors.
- *individuals and the social:* like in a system perspective, anarchy is about the relation of parts (individuals) to a whole (community/society) – unlike any system perspective on human activities, anarchy does not presuppose any 'fixed' (i.e., reliable, maintained) relation between any two 'elements', especially no hierarchical relations.
- *self-organization:* in systems thinking, you can only **observe** a system organizing itself (of course, you may observe yourself taking part in the system) – in anarchy thinking, you can only **do** it, i.e. take part in activities which an observer may identify as organization (of course, you may reflect on your own experiences, individually or collectively).
- *love and control:* anarchy and systems each appeal to different fundamental organizing principles. Systems thinking enables control, i.e., processes transforming the state of any system can be checked whether they are going to maintain the (higher order) structure of the system, thus providing a means to direct process behavior from the observers point of view. In contrast, anarchy thinking usually negates any control but self-control (some anarchist thinkers did incorporate control mechanisms for social organization, e.g. Bakunin). The success of social

interaction is relying on mutual trust and love – an organizing principle which, without further support, moves anarchy in the realm of Utopia. On the other hand, however, there is no viable social community solely based on control.

The above issues are related to phenomena of 'the real world'. In addition, these ways of thinking differ in their epistemological background: General systems theory (Bertalanffy) is based on mathematical assumptions, and the main applications and contributions of 'systems thinking' can be found in the natural and engineering sciences. 'Anarchy thinking' is based social experience (the literature is mainly referring to events in the periods of the 19th century worker's movement, the Russian revolution, or the civil war in Spain), it is well in line with historical approaches and critical theory.

At the end of his book "Systems Thinking, Systems Practice" Checkland (1981) writes several pages exploring the relation of Soft Systems Methodology and the Frankfurt School/critical theory, pointing out a "significant compatibility" between the two. But, turned of by the "apparently wilful obscurity of much of the writing of that School" (p. 11), he decides to stick with systems thinking as the foundation for scientific reflections and to incorporate the dealing with the richness of the social into the methodology.

This approach has contributed very much to theory and practice of systems development. However, at the same time it turns out to be a rescue operation for the monistic "Weltanschauung" of computer science and other sciences relevant for systems development. Systems development projects interfere not only with parts (e.g., individuals) but with the whole of social organizations (see definition above). Systems thinking is one important and very useful approach to reflect on these aspects, but it is not sufficient: there are many phenomena within social organizations influencing systems development projects which cannot be understood within the framework of system thinking.

Trying to deal scientifically with the 'social whole' as an entity is an extremely difficult subject. There are so many traps leading to totalitarism or obscurity, some schools of thought even ban any holistic approach beyond the realm of scientific rationality. Indeed, ultimately there is always some mystery about 'the whole' as there will always be a mystery (such as love) in human interaction. Sciences of the past (alchemy, for instance) have intensively tackled this issue, but scientific development in the Western world after the 'enlightenment' has excluded approaches in this direction. Like no other scientific approach of the last couple hundred years, 'systems thinking' clearly poses the relation of parts to a whole in the center of reflection. Moving from technical to social aspects, the limits of the application of this approach become more and more visible. I am convinced we will be forced to revise our scientific foundation for systems development sooner or later. May be, 'anarchy thinking' can give some useful hints.

5. Anarchy in Systems development

In systems development, we use systems thinking to construct a mental universe for analysis, discussion, and further development activities. Being aware that the issues mentioned above are not settled at all, I try to give some examples how 'anarchy thinking' could possibly contribute to systems development projects:

- Before starting a project 'anarchy thinking' calls for reflecting about the relevant social subjects to be involved. Besides individuals, collective actors must be considered as social subjects well (following Touraine 1984, collective actors have coordinated capability for action, explicit interaction with other actors, as well as a common perspective and goal-orientation). No given structure (e.g., an organizational chart) is to be accepted a priori. Any actor analysis should assume the absence of power relations until the project experience forces to revise these

assumptions. A combination with ‘system thinking’ may be possible by creating actor models showing the relevant social subjects in the situation of concern.

- While ‘system thinking’ in the context of software practice leads to the construction and implementation of algorithms, ‘anarchy thinking’ calls for social interaction and the freedom of decision about systems development issues. This interaction could ideally be a discourse, i.e. a ‘form of communication by reasoning to put problematic claims on the agenda and evaluate their justification’ (Habermas 1981). Making use of such a dualistic approach development methods could lead the actors involved choosing a path oscillating between discourse and algorithm implementation.
- ‘Anarchy thinking’ might also help actors involved in applying development methods, e.g.: (1) Control yourself as a method user but not the others! Gain knowledge and experience, evaluate and initiate discourse. (2) Don’t let ‘the method’ (or anyone else) control you! Question perspective and interest, and follow the method only when forced by authority.

Of course, these are only preliminary ideas, an input for discussion. It is an effort to overcome some limitations of thinking dealing with systems development and to scientifically acknowledge not only the structural, but also the anarchy aspects of real world projects. I am looking forward to these ideas being challenged during the Dagstuhl seminar, especially by those participants who favor dualistic approaches themselves.

References

Andersen, N.E., Kensing, F., Lundin, J., Mathiassen, L., Munk-Madsen, A., Rasbech, M., Sorgaard, P. (1990) *Professional systems development. Experience, ideas and action.* Prentice Hall, London

Checkland, P. (1981) *Systems Thinking, Systems Practice.* Wiley, Chichester (UK)

Feyerabend, P. (1975) *Against Method. Outline of an anarchistic theory of knowledge.* German edition: *Wider den Methodenzwang. Skizze einer anarchistischen Erkenntnistheorie.* Suhrkamp, Frankfurt/M., 1976

Habermas, J. (1981) *Theorie des kommunikativen Handelns.* Suhrkamp, Frankfurt/M.

Klischewski, R. (1996) *Anarchie – ein Leitbild für die Informatik.* P. Lang, Frankfurt/M.

Touraine, A. (1984) *Le retour de l‘acteur.* Fayard, Paris