

A Model of Social Action

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October 2006, updated July 14, 2008

A System One Research Journal Project

<http://journal.systemone.at/spaces/journal/members/Dirk+Baecker>

I.

We here present a model of social action, which shows how distinctions combine to develop into a form which acts as a *eigen*-value of a recursive function that produces and reproduces action in social context. Distinctions number and order indications which refer to variables each of which has to come up with some value such that social action can be determined. Combining those distinctions within a form means to gain indeterminacy because any one distinction is re-entered into the space it is bringing forth thus distinguishing the distinction from possible other distinctions. The form oscillates within the form, producing a memory of itself which is ready at any instant to subvert any one of the values of the form seeking a new indication and determination (Spencer Brown 1972; Kauffman 1987; Kauffman/Varela 1980).

The model thus integrates action within observation and communication. It is another version of a control model of the communication of action (Wiener 1961; Luhmann 1995, chap 4), based on the idea that social action calculates information produced by selections of messages out of a set of possible messages (Shannon/Weaver 1963). Note that within social action the set of possible messages is not technically given, but socially co-produced as a context explored, i.e. contextualized, for possible determination of information (Baecker 2005). The model presented here is a short version of its presentation elsewhere (Baecker 2007/08).

II.

Social action presupposes action. Something must happen, marking an event to which social meaning may be attributed (Weber 1968; Schütz 1967). To mark an event as action means to introduce a first closure. Some unknown code is working which maintains that there is a distinction of action from anything else, in the first place:

social action = action

Now action is singled out, indicating a peculiar type of operation not to be confused with other types of operation, brought forward by that type of operation and becoming an address for, a link to, further similar operations. But there is no indication as to what from action is distinguished from. It is a purely positive image of a something (Spencer Brown 1972: p. 42), devoid of any further determination, let alone of negations specifying what it may be not.

Note that there are no restrictions necessary as to what or who is able to act. Individuals qualify as do ghosts, gods, spirits, plants, animals, stories, and institutions. It is only by the introduction of restrictions on social meaning that some actors are classified, and others are not. Yet, "actors" are no category which at this simple stage of affairs can already apply. Actors depend on agencies and networks being introduced (White 1992; Latour 2005), of which here is not yet any trace. Even systems do not yet enter into the play, because nobody is asking how any action may be reproduced (Coleman 1990: pp. 1-23). Action may happen among organisms who qualify as living systems, without a social system necessarily to emerge.

However, action there is. We may assume that this action is performed by independent organisms trying to live and to mate, searching, as it is, for places "where the action is" (Goffman 1967). Thus, the distinction of action is re-entered into the space it brings up:

social action = action
living &
mating

Living may be done aggressively or defensively, mating may mean actual sexual intercourse, a pledge for its possibility, or a documentation of having it done successfully and being still able to pursue it, both modes of the first re-entry enter purpose and selection, approach and withdrawal, intellect and emotion (Darwin 2004; Miller 2001).

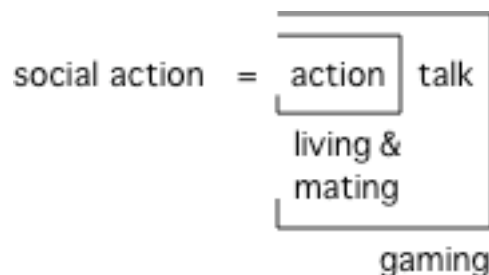
This re-entry is our first closure of social action. It is a purely, if that exists, operational one, indicating nothing but a certain "autopoiesis" (Maturana/Varela 1980) of a kind of action which respects the social condition of having to do with independent organisms who are nevertheless dependent for the life and their reproduction on each other. First closure removes just one degree of freedom, as Heinz von Foerster used to say (Von Foerster 1984: p. 6). One

may act in a way whatsoever, yet if it is social it better cares for any kind of continuation, a new beginning, at the same time as it it may put an end to something.

We still do not know anything about any social space emerging, yet we already look at some situation of uncertainty as to what any action may be about, to how it may relate to other action, and to which action gets reproduced and which not. Since we do not assume any intelligent design telling the organism how and when to act, or to refrain from action, we are led to assume that the first appearance of action is identical to the appearance of an observer as well, investing itself into the choice of action. Actors are observers, whatever their course of action may consist in. Their "skill", as Eric M. Leifer said, does not consist in translating the uncertainty of the situation into purpose and intention that determine the situation, but to do this while maintaining the uncertainty (Leifer 1991). Else, further choice would be unnecessary and thus impossible, draining the situation of social action emerging.

Observers determine indeterminate situations (Kauffman 1978: p. 182), yet in being observed with respect to the distinctions of determination they are drawing, the situations gets indeterminate anew. This may perhaps qualify as Spencer Brown's most important discovery with respect to a sociological interpretation of his calculus of indications: Looking at the "form" of any "distinction", i.e. at its inside, its outside, its mark of distinction, and its space of distinction it is bringing up (all together also called the "content" of the distinction), the observer realizes that the distinction is selectively and contingently drawn by an observer who could do otherwise. Social action consists in exploring and exploiting the indeterminacy brought about by actors as observers performing their distinction.

That is why it helps to talk. Since both living and mating engage others who may not be synchronized within either cognition or volition, social action needs talk in order to align possible lines of action:



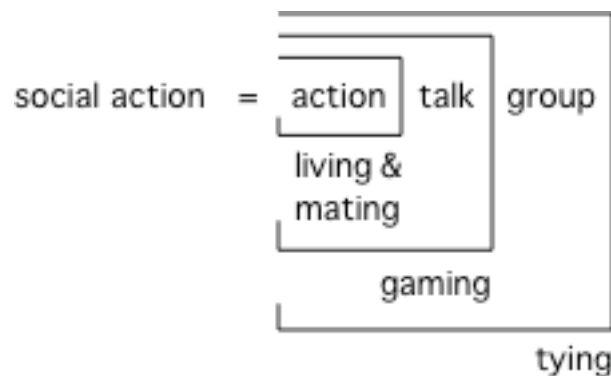
Our Spencer Brown expression now tells us that it is talk action is distinguished from. Observed with respect to its form, the distinction defines a separation as well as a connection such that action and talk get differentiated with respect to possibly confusing them, watching

action as mere talk, or talk as obvious action. Yet the distinction works nevertheless in that it separates regulation from operation if need be. Talking may vary on regulation, enforcing it or weakening it, liberating by that same token all kinds of action as mere play on operation.

Social action is making use of these new ways to both make explicit and dissimulate what action is about by gaming for possible partners, if "gaming" means both playing with them and capturing them. Gaming is a way to synchronize while accepting independence and loose coupling of the different organisms involved. Already at this still early stage of social action we deal with Machiavellian intelligence (Byrne/Whiten 1988; Whiten/Byrne 1997), if that involves "mind reading" to acknowledge for difference of purpose, for difference of perception, or just for difference of whim.

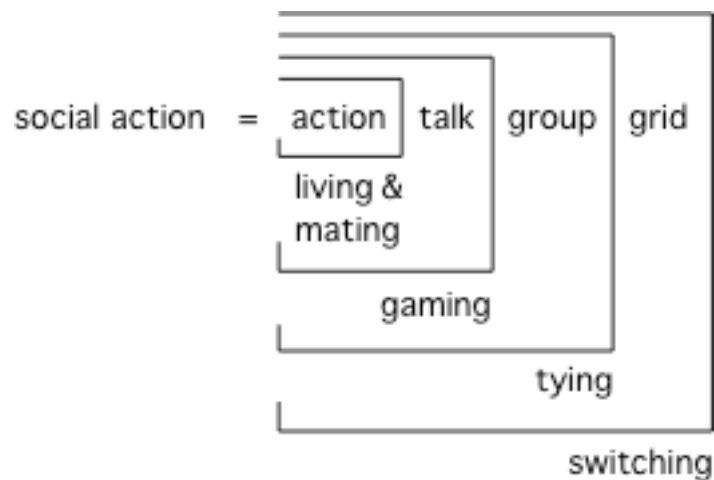
We now deal with double closure which adds regulation to operation (Von Foerster 2003), thus differentiating a system of social action from its environment, if "system" here means that reproduction is secured by possible self-negation, which provides the system with both self-reference and reference to environments. It is only the second closure which constitutes the system, because in talk (which may be gesture) distinctions are drawn which point to both possibilities of social action, approach and withdrawal, thus emphasizing the social side of any social action. The distinction between approach and withdrawal needs decision, and that decision will draw on the space of the social brought forward by social action.

Add a new marker, transforming the indeterminacy of the situation into determinateness without eventually killing the indeterminacy. Some notion for convention is necessary, or for a mutual knowledge, a shared understanding, which may be quoted implicitly or explicitly by everybody involved. We call the new marker by the name of "group", understanding here either "a redundancy of actors" (Colson 1978) or "a dimension of social incorporation" (Douglas 1978: p. 190), both of them producing "cultural bias" (Douglas 1978) which identifies the actors that try to engage each other:



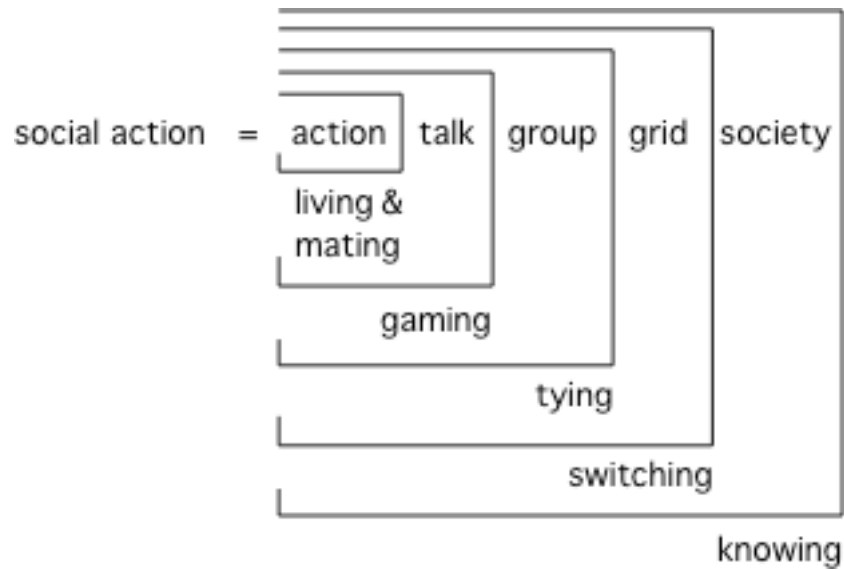
Group adds a third closure which amounts to ways of dealing with attempts to tie actors, who still must not necessarily be called individuals, into certain modes of social action, that is into a type for action which exploits independence for dependency. The third closure increases both indeterminacy and determinacy. It calms the minds and bodies of all people involved by telling them the group they are members of; and it arouses both emotion and intellect by confronting them with pecking orders, with mechanisms of inclusion and exclusion into gender groups, age groups, clans, and kinships, which restrict more than support their desires for action or for talk.

That is why group can only maintain itself with respect to grid, as Mary Douglas made explicit by proposing her group/grid-scheme (Douglas 1978). Grid, for Douglas, means individuation. I take it that individuation is only possible within the scope of a comparison of one group, one adheres to, to another group, which may be less or more attractive to adhere to. Individuation comes about as decision become possible and necessary as to which group an individual would like, or is called upon, to belong to. More specifically, individuation is called for as soon as an individual switches group, which makes grid a variable, which describes many individuals and several groups in relation to each other:



This gives us our fourth closure, both determining the relation of one group with respect to possible others and turning indeterminate which group it may be best to adhere to, thus calling for decisions with respect to when and whereto to switch.

Now add a fifth and last closure which finishes our rather simple model and relates to an understanding of society as the space of social action brought forward by observations of, and decisions on, action, talk, group, and grid:



For social action, society is a space of knowing your ways about, while reflecting on a still unknown outside of the form where of course all kinds of ghost may have their turn, devils and gods, kosmos and chaos, fate and nature, progress and doom. We leave that outside unmarked in order to mark that references for knowing do not depend on further structures and cultures added but on relations, indeterminacies, determinations of the variables of the form already specified.

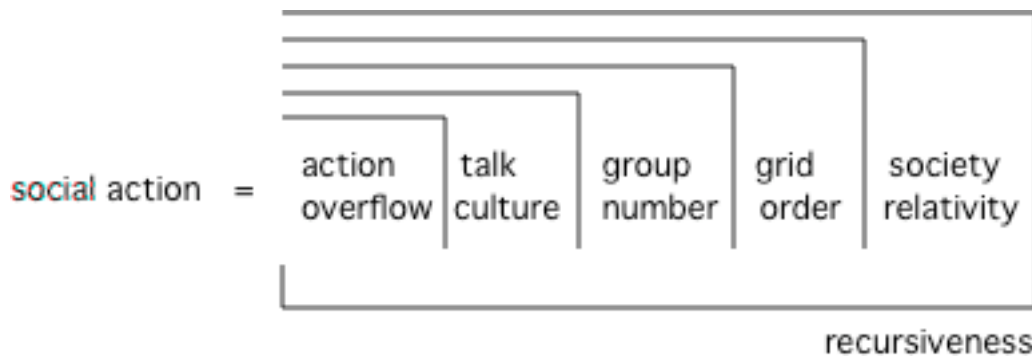
We can go on and add further re-entries, further closures, either to mark the unmarked outside of the form, producing thereby a new unmarked outside of the new mark, or to specify differences within talk, group, and grid. As this is an observer's version of social action, please feel free to try out other distinctions and other closures. Ours is just a model, which tries to give an idea of how to proceed using Spencer Brown expressions.

III.

Our model uses boundary mathematics (William Bricken's term), which describes concatenations of distinctions any one of which acts as an interface connecting thereby loosely coupled variables (White 1982). This boundary mathematics gets interpreted within a theory of calculating forms (Lehmann's 2007 term), each of which models the *eigen*-value of a recursive function. Calculating here means to interdependently change the loosely coupled variables if any one of them should change due to some non-linear course of events. The

variables' interdependence describes a kenogrammar of values linked to each other within a heterarchy of operations of both cognition and volition (Günther 1979; McCulloch 1989).

The elementary structure of such an *eigen*-value may also be rendered thus, skipping for the moment all but the last re-entry:



All variables communicate among, and thereby control, each other. In that we follow a fundamental insight of Norbert Wiener's cybernetics which he spelled out, quoting seminal ideas of statistical mechanics, by calling for a mathematics which was able to translate the overall contingency of the world into an infinite sequence of smaller contingencies (Wiener 1961: p. 46/7).

Action gives us the overflow of events that become the object of the attribution of meaning. Talk prepares the ground for the redundancy of actors that finally is invested into groups that give any one individual its number, counting it, as it were, among the members of the group. Grid sees to the necessary order investing the symmetrical relationships among the variable with some asymmetry. Order is within a negative language of institution and cancellation, what number is within a positive language of affirmation and multiplication (Spencer Brown 1972: p. 10; Günther 1980).

Relativity finally puts it all into perspective by making room for tying, switching, and subversion. Relativity means that any one variable, and any one value of a variable, may be addressed differently from different other variables, and values. Kinship, status, culture, and nowadays perhaps the global are among the relativity principles experienced by human society (Baecker 2007). They present us with "compound roles" (White 1963: p. 1), allowing me to address my father either as my father or as my mother's husband, or my supervisor either as my supervisor or as her supervisor's subordinate, telling me that my culture's evidentials are your culture's irritations, and presenting me with a world horizon that is ready to put into question any frame I am just working with.

A theory of calculating forms lets us explore knots of social action (Laing 1970; Kauffman 1995) as catjects (Baecker 2007/08), which go beyond the subjects and objects we are used to. Catjects are categorical constellations that lend culture (identity) and structure (dissemination) to flows and layers of action and talk. As I take it, this gives us some means to develop a sociological theory apt to deal with next society.

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