A FRAME FOR ORGANIZATIONAL ACTIONS AND MACROACTIONS

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Complete sentences describing a productive event define an agent, action, object, instrument, alignment, setting, product, and beneficiary. We treat these categories as an Event Frame that can be applied sociologically in several ways. Using the frame theoretically, we suggest how people bring determinacy, purposefulness, and mobilizability to events, and thereby event sequences emerge that serve as "macroactions"—productive routines conducted in social establishments, and used as purposeful actions by individuals. Employing a computer program to implement the Event Frame and facilitate data management, we show that the frame can be a basis for coding a narrative about organizational happenings into a sequence of well-defined events. Making use of the analytic capabilities of the same computer program, we illustrate how social networks can be extracted from events data as a basis for multi-faceted views of organizational and inter-organizational structure.

KEY WORDS: Events, Actions, Routines, Narratives, Networks

Studies of social organization largely focus on how organized activities and relationships affect individuals' power, morale, values, etc. (Perrow, 1986) or on relations among characteristics of macroactors like firms or nations (Ragin, 1988). However, a growing literature (Abbott, 1992; Abell, 1987; Fararo and Skvoretz, 1984; Heise, 1989)
advocates turning to social events as a key unit of sociological analysis, and this orientation promises to be particularly productive in organizational studies, reviving an emphasis that was prominent in March and Simon's (1958) classic treatise on organizations. Events intrinsically deal with process, and analyzing events in social organizations focuses on the organized processes and transactions that constitute the organization (Salancik and Leblebici, 1988).

In this article we present a frame for specifying how events are constituted and a scheme for analyzing how collaborative events are inter-related into macroactions that can be employed instrumentally by individuals. We then use the formulations to computerize the construction of databases of organizational events and illustrate some of the sociological results that can be extracted from event databases.

EVENTS

Karl Marx, Max Weber, and the early pragmatists (e.g., Peirce, 1960–66; Mead, 1936) all recognized the centrality of social events in social analysis, and their heritage continues in historical sociology (e.g., see Griffin, 1992) and in the ethnographic branches of contemporary microsociology where a fundamental concern is describing events that happen (e.g., Corsaro, 1985). Study of social events spread throughout the social sciences during the 1950s and 60s. Parsons and Shils published Toward a General Theory of Action in 1951. Psychologists Barker and Wright (1954) surveyed event settings in a small American town, and Barker (1963) sought principled methods for dividing "the stream of behavior" into unit acts. Floyd Allport (1955, 1962), following the Gestalt tradition in psychology, conceptualized complex events in terms of behaviors within behaviors. Anthropologists began to formulate ideas about roles as organizations of action (Nadel, 1964; Goodenough, 1965) and about the structure of complex systems of action (Harris, 1964). In 1954 linguist Kenneth Pike distributed the first installment of his opus (1967) delineating structure in verbal and non-verbal behavior. Transformational grammarians (e.g., Chomsky, 1965) developed generative models for the qualitative analysis of behavior that have reverberated through social sciences, including the sociology
of organizations (e.g., Skvoretz and Fararo, 1980; Salancik and Leblebici, 1988).

Our formulations implicitly draw on these traditions in the theory of action, but one additional line of linguistic theorizing is crucial. A case-frame approach to sentence analysis, rooted in Greenberg's (1963) evidence for the cross-cultural universality of parts of speech like subject, verb, and object, ripened in 1968 with Charles Fillmore's paper 'The Case for Case'. According to Fillmore: "The case notions comprise a set of universal, presumably innate, concepts which identify certain types of judgments human beings are capable of making about the events that are going on around them, judgments about such matters as who did it, who it happened to, and what got changed" (Dirven and Radden, 1987, p. 24).

**EVENT FRAME**

In this section we transform Fillmore's work on linguistic cases into an Event Frame for sociological analysis. (Table 1 provides a summary.) The Event Frame partitions events into elements that have a syntactic–semantic representation in every language according to case-frame grammar. Thus the sociological Event Frame recapitulates the system that humans everywhere use to conceptualize events, and the Event Frame represents a generalized implementation of the ethnomethodological suggestion that studying social structure requires analyzing the "content of talk in its semantic aspects" (Hubert, 1990, p. 802). Anyone, regardless of the language they speak, makes meaningful statements about productive social events by explicit or implicit use of certain categories of meaning, and sociologically

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1 Dirven and Radden (1987) collected selections from Charles Fillmore's papers, and we will refer to Fillmore's work via the Dirven and Radden book.

2 Cognitive scientists represent knowledge using frames (Minsky, 1975; Schank and Abelson, 1977) and production systems (Newell and Simon, 1972; Fararo and Skvoretz, 1984). Frames are like Guttman's facet mapping sentences (Shye, 1978) and generate structures by substitution of entities into frame positions.

3 Cases are abstractions extracted from sentences about events, and more cases can be extracted if one considers special subsets of sentences. For example, Fillmore in later writings identified the case of Counter-Agent, "the force or resistance against which the action is carried out" (Dirven and Radden, 1987:49), but this notion arises in sentences about "complex force-dynamic patterns" where there is "steady-state opposition of two forces" (Talmy, 1988:54), not in event sentences in general.
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TABLE 1
The Event Frame

<table>
<thead>
<tr>
<th>Element</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agent</td>
<td>The instigator of a happening.</td>
</tr>
<tr>
<td>Action</td>
<td>The fusing of event-frame elements into a happening.</td>
</tr>
<tr>
<td>Object</td>
<td>The entity that is moved or changed, such that a repetition of the happening requires replacement. People can be objects.</td>
</tr>
<tr>
<td>Instrument</td>
<td>An entity that is used by the agent to causally advance the happening while not being significantly changed by the happening. People, social organizations, and verbalizations can be instruments.</td>
</tr>
<tr>
<td>Alignment</td>
<td>The specific place or time at which an instrument is applied to an object or in a setting.</td>
</tr>
<tr>
<td>Setting</td>
<td>A convergence of relatable agents, objects, and instruments within a space-time boundary.</td>
</tr>
<tr>
<td>Product</td>
<td>An entity that comes into existence as a result of a happening and that enables or disables subsequent happenings.</td>
</tr>
<tr>
<td>Beneficiary</td>
<td>The agent of an event that intentionally is enabled or disabled by the agent in the focal event.</td>
</tr>
</tbody>
</table>

elaborated, these categories provide a formal basis for describing events.4

We explicate the elements of the Event Frame by quoting linguistic definitions of each case, and then commenting on sociological usage.

**Agent:** "the typically animate perceived instigator of the action" (24).5 The agent of an event is the person who executes the action. Events in organizations are performed by agents in five major classes: employees, investors, suppliers, distributors, and consumers (March and Simon, 1958, p. 89). Competence for performing an action is associated with status characteristics (Berger et al., 1977) and roles (Stryker and Statham, 1985), so agents ordinarily are identified in terms of social identities like manager, secretary, printer, etc.

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4 Similar categories are employed in the Associated Press lead that journalists use—the 5 WH formula of Who did What, When, Where, Why, and How (Charnley, 1975: 186–7). Fararo (1989:215) presents a formulation that includes agent (implicitly), action, object (what he calls resources), product, and location (situation-type); instrument and beneficiary are not mentioned. Heise (1979) used an actor–behavior–object frame to study impression formation from events. Franzosi (1990) promoted an actor–action–object frame for content analyses.

A collective agent may be abstracted from a set of actors who initiate an event – e.g., a committee, or an alliance (March and Simon, 1958, p. 130) – ignoring the sequence of interpersonal events by which members pool ideas and skills and achieve an outcome (Shaw, 1981, pp. 57–68). Macroactors are abstractions of this kind: the agency of members of an organizational entity is attributed to the organization itself.

**Action:** Verbs name actions, and the pivotal position of verbs in linguistics is reflected in the following statement: “the total human conceptual universe is dichotomized initially into two major areas. One, the area of verb, embraces states (conditions, qualities) and events; the other, the area of the noun, embraces ‘things’ (both physical objects and reified abstractions). Of these two, the verb will be assumed to be central and the noun peripheral. . . the verb determines what the rest of the sentence will be like” (Chafe, 1970, pp. 96–97).

Subjectively, an action is a Gestalt that unites event elements. For example, subjectively, the action of “medicating” exists in the mental closure that occurs around a capable actor, an ill person, and dispensing of medicines with subsequent recovery from illness; and “medicating” is distinguished from related events, like “feeding” or “poisoning”, by this complex of interrelated meanings. Materially, an action is manifested through the event itself. For example, the material manifestation of medicating is a perceivable convergence of medicator, ill person, administered medicine, and recovered patient.

Actions name particular kinds of causal transformations that can be performed by an agent. No deeper understanding of causal process is available in ordinary linguistic descriptions of events or through the Event Frame. Dissecting an action in terms of its “concomitant execution” (Habermas, 1989) yields more specificity, but the dissection simply alludes to more actions that name more minute causal transformations (Heise, 1975).

The concomitant execution of an action can be interpreted in terms of “situated action production rules” (Fararo, 1989), and agents’ competencies depend on knowing the production rules (Anderson, 1983).

**Object:** “the entity that moves or changes or whose position or existence is in consideration” (49). The object of an event is where the action is focused. Experiential events (e.g., looking at an apple) separate from productive events (e.g., slicing an apple) in terms of whether or
not the object changes form or position, and also in terms of whether the object is transformed to a product that can be exchanged (Salancik and Leblebici, 1988). Organization analyses mostly are concerned with productive events that transform objects into products. Since the object of a productive event is used up or relocated, a productive event cannot be repeated until another object becomes available at an appropriate starting position, and many organizational processes require a continuing supply of objects.

Semiotic objects – signs and messages, information and requests, written or spoken – enter into many transactions (Salancik and Leblebici, 1988). They support productive events rather than experiential events whenever the message results in a material product. For example, a waiter, more than merely listening to a diner's order, also transforms the order into a meal, and thereby the diner's order is the object of a productive event.

A productive event may require auxiliary objects, or supplies, that are transformed along with the focal object as the product emerges. In organizations some supplies may be provisioned as utilities – water, fuel, electricity, etc.

Instrument: “the inanimate force or object causally involved in the action or state” (24). Instruments are entities that have to be aligned with an object in some particular way in order for the event to occur. Whereas a productive event uses up its object, the instrument remains relatively unaffected and available for more occurrences of the event.

An action may depend on tacit instrumentation that maintains actors and objects in required states and disables disruptive changes in roles, so heating and cooling systems and walls and dividers, and buildings providing these things may be required instrumentation for some social actions.

People, even large complexes of people, can be instruments of an individual's action – a point developed later in this article.

Setting: Fillmore identified a locative case that specified “the location or spatial orientation of the state or action” (24) but ultimately divided the case into a number of cases – Location, Source, Goal, Path. Orienting to both linguistic and sociological traditions, we will focus on two kinds of references to position in space and time: “setting” and “alignment” (the words “setting” and “alignment” are not constructs in linguistic case theory).
Setting registers the space–time domain of the action. A setting is the arena within which the agent is in role, objects and instruments are accessible, and setting-specific actions are legitimate and “work” the way they are supposed to work. Some named locations or times (e.g., pet store, Mass, Thanksgiving – see Smith-Lovin, 1988) represent settings almost exclusively, but other entities (e.g., cars) may be objects in some events and settings in other events.

Settings for organizational actions may be much larger than the organization’s physical structures, as when modern communications and transportation link agents and beneficiaries from different organizations within a city, a nation, or cross-continentally. Inter-organizational events occur in community or societal settings.

Alignment: Linguistically, alignments are signaled by prepositions like “at,” “on,” “in,” “through,” “between,” etc. The object of the preposition refers to the part of an object where instruments are brought to bear, or may identify positioning of an action within a setting. Corresponding to this linguistic form, the alignment category of the Event Frame is for specifying specific spots or moments at which an instrument is applied or an action occurs, and entities entered in the alignment category are parts of objects or parts of settings. For example, shoulder is the alignment in the event “the physician injected the patient in the shoulder,” and half-time is the alignment in “the celebrity presented the award to the player at half-time during the Super Bowl.” Competing demands on agents in a collaborative production sometimes require separate communicative feedback that establishes alignments. Severe problems of interpersonal alignment can instigate schedules (March and Simon, 1958, p. 160), or a division of labor in which an expanded set of agents deals with temporal and spatial demands of the situation (Salancik and Leblebici, 1988).

Product: “the entity that comes into existence as a result of the action” (49). Events may transform objects into products that are dramatically different, as in a chemical reaction, or the coronation of a queen. However, most products involve lesser transformations. For example, assembling pre-fabricated shelves achieves a product by reorganizing the original objects; sending flowers changes the flowers’ location; anesthetizing a limb changes the neurological properties of a body part; and, at the bottom line, profits and losses are monetary increments. In general, products result from objects being transmuted,
reorganized, re-located, or re-configured with more or less properties or parts.

Products are consequential in that they enable or disable other events. That is, one event's product may become the object, instrument, or setting of another event. Socialization actions enable other events by producing various kinds of agents.

Beneficiary: "the animate being affected by the state or action identified by the verb" (24). Fillmore referred to this case as the "dative" or "experiencer." Chafe (1970, pp. 144–149) divided the case into beneficiary and experiencer, and we adopt Chafe's analysis. The construct of Beneficiary is useful in discussing purposeful social productions where the product of one event is passed on for use in subsequent transformations or transfers (Salancik and Leblebici, 1988). Experiencer is useful in analyzing sensing and emotive events (McCawley, 1976) such as arise during some interaction rituals (Collins, 1981) and consumptive events whose "outcomes have no exchange value" (Salancik and Leblebici, 1988, p. 20).

A beneficiary is a user of an event's product and is apt to set pragmatic and moral standards for the conduct of the production event (March and Simon, 1958, p. 189). That is, a product must allow the beneficiary to accomplish a subsequent action, so the agent in the productive event is obliged to maintain standards of quality. Additionally, subsequent events may not occur unless they are emotionally fulfilling for the beneficiary, so the producing agent may have to meet aesthetic and purity standards, being tasteful and moral as well as competent in generating the product. For example, a meal fails to meet purity standards for an orthodox Jew – no matter how technically competent the chef – unless the food is prepared within kosher strictures. Managers who intervene as beneficiaries in order to implement a power system (see our later discussion of mobilizability) must formalize standards and see that the standards are heeded by producing agents, or else purposeful production sequences break down. For example, Burawoy and Krotov (1992) described a Russian furniture factory where the control of standards was poorly implemented, resulting in frequent aborts of the production process and wastage.

Some events have multiple beneficiaries, this commonly being the case when the product is a setting for other events. An aggregate beneficiary raises issues of justice and fairness in access to the product.
THEORETICAL EXPANSION

In the next few sections we use the Event Frame as a foundation for developing the concept of "macroaction," which is essential for describing and understanding individual agency in organizational processes. The term "macroaction" refers to a type of social organization in which collaborative activities are so routinized and dependable that they can be used instrumentally (Perrow, 1986) and they can be combined by management in order to create new organizational routines (March and Simon, 1958, p. 150; Nelson and Winter, 1982, p. 130). In brief, macroactions arise when individual actions are deterministically productive, purposeful, and mobilized, and the complex of action is supported by an establishment.

Determinacy

Causation can be viewed as a kind of talk in which one need not specify setting, instrument, alignment, or product explicitly because they are understood as soon as the action is mentioned (Shibatani, 1976). This elaborates an interpretation of cause presented by Hanson (1965):

We can infer an effect from some cause only when the 'cause-word' guarantees the inference.... [p. 60] The notions behind 'the cause $x$' and 'the effect $y$' are intelligible only against a pattern of theory, namely one which puts guarantees on inferences from $x$ to $y$. [p. 64]

We borrow these notions for our construct of determinacy. An action is determinate if we are guaranteed that in a proper implementation of the action, a competent agent aligns an appropriate instrument with a suitable object within an apt setting and yields a standard product. A determinate action implies agent, instrument, object, alignment, setting, and product. The implications are constituted both materially and through the logical necessity (see Bradley and Swartz, 1979, pp. 268–269) that is implicit in the cultural meanings of the action, instrument, alignment, setting, and product.

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6 A determinate action also implies its appropriate agent and object, but we do not emphasize these implications for the sake of clarity when showing the conjunctive implication from agent and object to action that represents mobilizability.
A determinate action implies its product, so if the product is not attained by a performance then it is presumed that the action was not conducted correctly. For example, a student whose physical science experiment does not produce the expected result is judged to have performed the experiment incorrectly. Critiques of action can raise questions about an agent’s competence, an instrument’s effectiveness, the quality of objects and supplies, the correctness of alignments, the appropriateness of a setting, or even narrow-mindedness in defining the product. People account for their own failures by alluding to such matters, and they may entertain these possibilities at length—even indefinitely—before giving up an accepted notion of determinacy, as shown, for example, in Luhrmann’s (1989) study of occult magicians, McHugh’s (1968) study of experimental psychotherapy, or Gieryn’s (1991) report on the cold-fusion debate.

Determinate actions are essential components of organizational routines that yield a dependable product. We next examine what must be done so that determinate actions link into a sequence where one social event instigates the next. The crucial factors are purposefulness and mobilizability.

**Purposefulness**

A productive action becomes purposeful when it implies a specific beneficiary with rights to the product. The beneficiary is part of the meaning of the action, and a purposeful action evokes awareness of the beneficiary who will use the product. Additionally, the product of a purposeful action enables a future event in which the beneficiary operates as agent and in which the product is an element (i.e., it turns into an object, instrument, setting, etc.). The beneficiary in the first event is the agent who conducts the second event, and the product of the first event becomes an element in the second event.

Purposeful actions can emerge when a continuous supply of a product opens a niche that users occupy, and the users are conceptualized as beneficiaries who are taken into account during production activities. For example, aesthetic actions occasionally turn purposeful when dealers or managers begin selling an artist’s products in an art world, and the artist begins relating to beneficiaries while engaged in creative action (Becker, 1982). On the other hand, purposefulness in
organizations often is engineered into existence by planning a sequence of activities in which agents of later events are beneficiaries of earlier events, and then experimenting until the production sequence works (Barley, 1986; Kulkarni and Simon, 1986).

An assembly line is the epitome of a purposeful sequence: repeated events are sited strategically with auxiliary transportation so that products move quickly from agents to beneficiaries, the whole sequence progressing like a moving chain. However, many other organizational procedures also link determinate actions by passing products from one agent to another in a series of events, until the final outcome is achieved.

Determinate, purposeful actions have the potential for being routinized such that a whole sequence of events unfolds smoothly every time an initial event occurs. However, so far we have not specified why subsequent events occur without disruptive delays. What makes the beneficiary of one event turn into the agent of a subsequent event when the product is delivered?

**Mobilizability**

Routinized sequencing of events requires that the agent of each event initiates action whenever the opportunity arises. That is, whenever the agent for an action is in the appropriate role and is presented with an appropriate object for the action, then the agent instigates the action—the action is mobilized. This corresponds to March and Simon’s (1958, p. 149) proposition that “a program [of action] . . . is initiated when it is evoked by some stimulus,” but we add that the stimulus is the object of the forthcoming action and that it instigates the action only when the agent is in the proper role. Psychologically, action on the object is implicit in the meaning of the agent role, and the particular action of the agent is implicit in the meaning of the object—co-presence of agent and object implies the particular action.

A physician confronted with a seriously injured child in an emergency room provides an example of mobilized action: the physician knows what to do, has the facilities for doing it, and is psychologically impelled to treat the child and try to effect recovery. Healing injured children is implicit in the meaning of physician, and the need for healing by a physician is implicit in the meaning of “injured child.”
Conjunction of physician and injured child mobilizes the healing action.

McCarthy and Zald’s (1977) distinction between conscience and beneficiary constituents in social movements suggests that an action is mobilizable either because it is intrinsically fulfilling or indirectly fulfilling. (Kemper and Collins’, 1990, discussion of status and power also suggests this.) We discuss these two possibilities in terms of affect control theory (Heise, 1979; Smith-Lovin and Heise, 1988; Smith-Lovin, 1990; MacKinnon, 1994), which provides a theory of motivation that broadens March and Simon’s (1958, p. 84) discussion of the theory of organizational equilibrium.

Events generate particularized impressions of their elements, and people try to manage events so as to experience convergence between these impressions and fundamental sentiments about the elements. We can say that an event is fulfilling if an agent experiences such convergence, and an event is stressful if the event generates impressions that diverge widely from sentiments. For example, “the mother encourages her son” is a fulfilling event for the mother because impressions generated by the event reproduce cultural sentiments about mothers, sons, and encouragement; torturing her son would provide a stressful experience for the mother.

One way to assure that an agent will carry out an action when the opportunity arises is to have the action be fulfilling for the agent.

As soon as a person finds that an event with the self as actor is the one that will best confirm sentiments in the circumstances, that act has begun psychologically, and behavioral implementation follows as a matter of course unless interrupted. (Heise, 1979, p. 22)

If the agent has certain sentiments about the agent role, action, objects, and so on, such that impressions generated by the event match the sentiments, then the action yields a fulfillment event and begins automatically when agent and object are together. For example, some professors work for relatively low wages because they have values that allow them to be fulfilled by performance of their duties; some artists continue to produce solely because their artistic activities are personally fulfilling. Heise (1979, Chapter 5) showed that common cultural sentiments support fulfillment from normative actions of many
institutional agents, such as parents with children, physicians with patients, legal officers with defendants.

Another approach to making actions mobilizable is to impose power relations (i.e., social arrangements that make people do what they might not do otherwise, varying the definition provided by Kemper and Collins, 1990). Power relations link an agent's desired action to other events that indirectly change fulfillment levels for the agent, creating inducements and determining what actions are to be taken in the event that a party fails to complete a transaction (the guarantor function – Salancik and Leblebici, 1988). We will analyze one kind of power relation – an incentive system – in the next section, but power relations can be organized in numerous ways.

Mobilizable actions arise from intrinsic motivation or from the exercise of power. Thus activity in an organization arises either from the commitment of members to their roles (Stryker, 1980; Burke and Reitzes, 1991) or from ample resources that are dispensed so as to maintain contingencies between production events and rewards or punishments.

A mobilizable action takes place whenever an appropriate object is encountered by a motivated agent who has the appropriate role in an appropriate setting where adequate instruments and supplies can be aligned in required ways with the object. Organizational activities generally are mobilizable, so when the agent of one event passes a product to the agent of another event, the second agent begins the action that the product enables.

Collaborative Productions

Making events determinate, purposeful, and mobilizable leads to collaborative productions in which certain inputs guarantee certain outcomes through the activities of multiple people. This is visually obvious in an iconic formalization of our propositions, shown in Figure 1, which displays two events schematically and shows that there is an

7 The conventions used in drawing diagrams are as follows. An arrow connecting two elements stands for implication; source implies target. Event-frame elements are represented always in the same positions. Lines embracing two elements mean that the elements are the same thing in two different events. A thick line connecting two constituents means that the lower is an instantiation of the higher.
unbroken path from a submitted object to a final product through the actions of multiple people. On receiving an appropriate object, the agent of the first event is mobilized into the first determinate action and realizes every element of the event including a product suitable as an object for the second event. The product is passed to the agent of the second event since that person is the acknowledged beneficiary of the first event. When the agent of the second event is confronted with the object, the second action is mobilized and leads to the final product.

Power relations are themselves collaborative productions in which mobilizability of other actions is achieved through contingent reward and punishment organized in transactions (March and Simon, 1958; Salancik and Leblebici, 1988). For example, Figure 2 shows an incentive system that can be interpreted as an operative being paid money by a paymaster for work done. Operative and paymaster are identified by two different shadings, and objects and products are shaded to indicate changes in ownership. The operative’s product is expropriated by the paymaster and enables some form of profitable event that is fulfilling for the paymaster. In an organizational setting, the profit event also lets the paymaster take a benefactor role, transferring some of the profits to the operative, and thereby enabling a fulfillment event for the operative. The net effect of the system is to make the operative’s productive action conditionally mobilized – mobilized as long as the system is in place – which is indicated by the light implication arrows from agent and object to action in the first event.
FIGURE 2 An Incentive System.
An incentive system requires that a paymaster has rights to the operative's product and also has instruments and competence for dispensing rewards. Moreover, the benefactor's rewarding action itself has to be mobilizable. The benefactor's action might be mobilizable because the system operates as an exchange, as suggested above: the operative's product is transferred to the benefactor, permitting a fulfillment for the benefactor that associatively conditions the benefactor's action into mobilizability. Alternatively, the benefactor might be fulfilled intrinsically by the rewarding action: a patron who supports artists is an example. Or the benefactor's action might be mobilizable because the benefactor also is involved in power relations with workers or outside parties.

Social science provides at least two explanations of why such a system mobilizes the operative's action. The first is a rational accounting (e.g., March and Simon, 1958; Coleman, 1990): the operative computes the benefits and costs of working and accepts the contract represented in the system if benefits exceed costs (in our framework benefits would be a function of fulfillments, and costs would be a function of stresses entailed in the work). A second accounting from operant learning theory (Homans, 1974; Honig and Staddon, 1977; Herrnstein, 1990) presumes nothing about rationality, being simply an empirical generalization applying to humans and non-human organisms alike: a system like that in Figure 2 reinforces the operative's action and increases the probability that the operative will emit the action when opportunity permits.

Macroactions

An individual who submits an appropriate object to the initial agent in a collaborative production system triggers the determinate process and the creation of the final product, and this performance is a determinate action in itself, as shown in Figure 3. The collaborative production system is boxed in the figure to symbolize that it has been realized materially, and it is connected to the instrument element in

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8We focus on the evolutionary case in which a collaborative production system already has come into existence. Alternatively, a macroaction might be conceptualized and then engineered into existence. For example, hospital administrators conceived of a way that parents could help their poisoned children; then subsequently they worked to materialize the Poison Control Centers required for parental action (Broadhead, 1986a, b). A detailed examination of how macroactions can be engineered into existence is beyond the scope of this essay, but Blase (1986) discusses some of the problems.
the individual's event to signify that it is the instrument that transforms the object into the product. The object and product of the individual's event are connected to the input object and the output product of the collaborative production to indicate that they are the same things. We call the individual's action in Figure 3 a macroaction because it is a determinate action in which an individual employs a social system as an instrument.

Instruments for action are enduring things that are available and operational when needed, so a collaborative production system supporting a macroaction has to be an establishment maintained at a particular place at certain times, equipped, provisioned, and staffed by competent personnel apart from any particular usage. Personnel must be committed to their roles or else a power system must be in place to assure that the system is mobilizable.
Agent and object often are physically distant from a collaborative production system at the initiation of a macroaction, so the alignment procedure occurs within a spatial or geographic arena and may depend on auxiliary instruments of transport or communication. Macroactions that are used by people outside of an organization imply the presence of a community in which people know that the community offers certain opportunities (Howard and Heise, 1981).

Our formulation of macroaction derives partly from literature on social institutions (e.g., Balzer, 1990; Berger and Luckmann, 1966; Fararo and Skvoretz, 1984, 1986; Neale, 1987; Meyer et al., 1987; Zucker, 1987). In fact, we view institutionalization as a further development following emergence of a macroaction. A macroaction is institutionalized if it is attached to a legitimate role, actors performing that role have the knowledge and the means for performing the macroaction, and performance of the macroaction is mobilizable.

Much of the mystery in the micro–macro distinction (Collins, 1981) fades when we recognize that individuals use social organizations to perform macroactions. The overall texture, the woof and warp of organizational events is the same as the patterning of action at the individual level because such action is action at the individual level. The macroaction concept allows us to see that individuals set large-scale happenings into motion as they engage in their own interactions, and they keep large-scale social processes going by repeating their daily agendas of social interactions.

Macroactions themselves can be made purposeful, mobilizable, linked together into determinate chains, thereby forming more extensive collaborative productions which can be entitied as the instruments of still other macroactions. Such recursive construction of macroactions ultimately yields social complexes like corporations or armies that involve thousands of people, and that support concerted happenings that are far-reaching in time and space. Yet the crucial insight continues to hold: these vast social complexes are instruments of action by individuals – magnates and rulers (Levi, 1983).

EMPIRICAL APPLICATION OF THE EVENT FRAME

In common discourse, people truncate their descriptions of events, attending only to the most salient aspects, presuming the listener can
fill in the rest. However, truncated descriptions of events raise the risks of ambiguity and biased assumptions about what was left out. The Event Frame poses a set of eight questions to be answered about social occurrences, and answering these questions in systematic studies of events reduces risks of ambiguity and bias. Moreover, answering these questions often augments understanding of what happened by drawing attention to matters that might have escaped notice. Application of the Event Frame offers a discipline for systematic observation and provides some insurance that one is specifying essential elements of each happening.

Yet the Event Frame, like the languages from which it is derived, is flexible. The same event can be framed differently depending on the perspective that the analyst takes and on the degree of specificity that the analyst seeks. And the description of an event may be left truncated to some degree, because answers to some of the eight questions are irrelevant, or because they are undefined for the kind of event being considered.

For example, consider this snippet of narrative text (paraphrased from the illustrative analysis we present later): "The manager of the printing establishment sought a loan from a commercial bank (so he could buy new printing equipment)." Sticking close to the original text, we would have manager as agent, seeks as action, and loan as object. The implicit product is additional printing-establishment funds and the beneficiary is the manager. This framing treats instrument and alignment as so irrelevant that they need not be mentioned, and setting is ambiguous (it could be bank, were we to imagine the manager going there to sell his plea by discourse alone). However, let us guess that the manager proceeded in a conventional way, whereupon we can reframe the event more specifically as: the manager (agent) submitted (action) loan forms (object) via a secretarial staff (instrument) to an officer (alignment) at a bank (alignment) within the business community (setting) producing a loan request (product) for the bank officer (beneficiary) to process. The reformulation changes the beneficiary, emphasizes the presence of a business community as a pre-condition for the event, and reveals that the manager engaged in a macroaction, using social organization (the secretarial staff) as an instrument for individual action.

Here is another paraphrased snippet from the data analyzed later: "(After workers voted against reducing the establishment’s labor force)
the manager suggested that the bank official address the assembled workers (which he did).” Here manager is agent, suggested is the action, business community is the implicit setting, and bank official is one alignment (with a place alignment – like the bank official’s office – going unmentioned). Instrument would be the medium of communication (interpersonal encounter, telephone, letter, etc.) and may not be of interest here. Bank official presumably is the beneficiary, because this event enables an action by the official. But what is the consumed object, and what is the product that enables the bank official’s speech? We might make up some imaginative entities that fit these slots: e.g., an ameliorative effort by the manager resulting in a plan to persuade. Alternatively, we might treat this kind of recursive event (A suggests that “B does something”) as having no objects or products, but rather as establishing an implication from a later event (the speech) to the present event (the suggestion), in which case object and product are undefined and unspecified, and instead we note the implication.

The Event Frame constitutes a model of events that is somewhat more constraining than the linguistic case grammar on which it is based. Yet, these examples show that the Event Frame remains very flexible, and is a tool for interpretive, constructionist work.

Computerization

Event Frame data on organizational happenings get so complex that computer help is required for data management. Computer assistance is provided in ESA, a Java program running on the World Wide Web at the following URL:

http://www.indiana.edu/~socpsy/ESA/Index.html

(This World Wide Web site was created by D. Heise, January, 1997. Analyses in this paper were obtained before that with a HyperCard prototype of ESA.)

ESA allows a researcher to translate an ethnographic or historical narrative about organizational happenings into a database where each event is coded in terms of Event Frame categories. Entities used in Event Frame categories can be classified in terms of how they imply other entities – e.g., “a vice-president is a kind of executive.” Additionally,
implications between events can be coded. Analyses are conducted by running through events in the database, tallying a feature of events or some association of features or some pattern of event linkages.

Narrative Screen
Analysis begins at a screen that displays the narrative account of the events of interest. Each event is defined by selecting some text from the narrative and entering a short name for that event.

Event Screen
Each defined event can be viewed on an expanded screen where the short name may be edited, and a longer event description may be entered. The event's composition is specified by filling in eight fields corresponding to Event Frame categories. The user clicks a button to indicate an entry is being made, and then chooses the entry from pop-up menus showing available definitions of entities, people, and actions. If the required element has not been defined yet, the pop-up menu allows the user to define a new entity, person, or action that then is added to the menu.

Entity, Person, and Action Screens
Entities, people, and actions are defined in terms of two kinds of information: the name of the entity, person, or action, and containment within other defined entities or kinds of people or kinds of actions. Containment indicates how the element can be abstracted. For example, a "committee member" might be identified as a kind of "faculty member," so events involving committee members can be rephrased more generally in terms of faculty members. A user defines containment by making a selection from a pop-up menu.

Interpersonal Relations
A sequence of organizational events associates people in a variety of relationships that can be identified by pairing Event Frame categories – agent-beneficiary, instrument-object, product-beneficiary, etc. The ESA program can extract information regarding these relationships from an events database, allowing an analyst to identify networks based on each kind of relationship (Marsden, 1992).

The procedure is as follows. An analyst goes to the person screen for one of the people who is in the network and clicks a button called
“Constraints.” That brings up a screen for defining the relationship. For example, the constraints can be set so as to select only events in which the focal person is agent, while tallying others who are beneficiaries. The analyst then returns to the person screen and clicks a button called “Compute Associations.” The program assembles all events in which the focal person was agent and counts the number of times specific others were beneficiaries in these events, reporting the results in a field called “Person Associations.” The actions that established Agent-Beneficiary relations are listed in a field titled “Action Associations.”

An analyst also can make use of abstraction specifications, in which case the focal type is expanded to all of its more specific types while searching for relevant events, and counts of associated persons are computed for the most general types. For example, an event like “Curriculum-committee members establish requirements for undergraduates” would contribute to the agent-beneficiary relation between professors and students, providing committee members were specified as a kind of professor and undergraduates as a kind of student.

A field titled “Entity Associations” shows relations between the focal element and entities. Analyses can be conducted so that this field gives information about relations of people to material objects (e.g., Agents – Instruments) or relations amongst entities (e.g., Instruments – Objects). Latour (1987) emphasized the importance of such relationships in sociology, and such information is useful in studies of organization members and their material resources.

Action screens allow association analyses to be conducted for specific actions. For example, one could determine Agent-Beneficiary relations for the particular act of purchasing.

**Inter-event Analyses**
The ESA program also conducts prerequisite analyses (Heise, 1989; Corsaro and Heise, 1990; Griffin, 1993; Griffin and Ragin, 1994). ESA offers a number of enhancements over the earlier program called *Ethno* (Heise and Lewis, 1988).

**ILLUSTRATIVE APPLICATION**
We used *Connections* to code organizational and inter-organizational events described in a short narrative published by Peter Abell (1993,
A British printing co-op is losing out to competitors who have upgraded their equipment, and the co-op manager applies for a bank loan so that the co-op also can upgrade. The banker makes a loan contingent on a reduction in the number of co-op workers. The workers vote against this initially, but the manager, acting as an agent of the relationship between creditors and employees (Leblebici and Salancik, 1989), barrages them with speakers until they agree. Some newer workers are fired, and the banker grants the loan.

Coding Abell's detailed narrative with the Event Frame forced us to unpack dense allusions to events. For example, we identified four scene-setting happenings in the sentence "The Cooperative which produced low quality printed materials faced severe competition from other cooperatives and private firms which had recently improved their quality by installing new equipment." Moreover, to get clear Even Frame renderings, we were forced to bring customers in at this point, though customers are not mentioned in Abell's text.

Also, coding with the Event Frame emphasized the business community as a wider context for the events, something that was largely implicit in the original narrative. When forced to specify each relevant event in detail, we had to recognize that executives at competing firms, printing customers, printing equipment suppliers, and unemployed people all were part of the story, in addition to the banker and the Registrar of Co-ops mentioned explicitly by Abell.

Abell's narrative is 25 sentences long. We partitioned some sentences and deleted some recurrent steps he mentioned in passing, ending up with 29 events. By our definitions, 31 entities entered the narrative explicitly or implicitly as settings, instruments, objects, or products. There were 13 kinds of people involved; 16 when allowing for characters in varying states (e.g., someone who is obliged to perform a requested action).

Macroactions appeared in the narrative, as when the co-op manager directs the co-op chair to get a vote on the restructuring proposition. Though details are not reported, this presumably requires that the chair and unmentioned helpers send out notices of an assembly, that workers show up, that the chair addresses them, that the workers vote, and that someone sorts and counts the ballots, yielding a vote tally that is the product of the whole process and which is given to the manager. Another macroaction is glossed completely when Abell reports that the manager "sought a bank loan;" we presume that the
manager used the normal procedure of having forms prepared and submitted to the bank through the instrumentality of a secretarial staff. Abell's sketchy descriptions of macroactions are not exceptional: macroactions often are glossed in descriptions of organizational process, making it difficult to recover the routine individual actions that constitute organizational process.

We used *Connections* analytic capabilities to define two kinds of interpersonal networks that were instantiated during the episode. We focused on the banker, the co-op manager, the co-op chair, co-op members other than the manager or chair, and the Registrar of Co-ops. The results of an agent–object analysis (displayed in Table 2) show that the banker domineers, sometimes using people in the co-op as objects, but never being objectified by them. The manager dominates, too, but is an object for some actions by co-op members. The manager is the salient agent, while co-op members are prominent objects of others’ actions. An agent–beneficiary analysis (also displayed in Table 2) offers a somewhat different image of structure. In particular, the banker and the manager now are seen to be closely tied as beneficiaries of each other’s actions, each creating opportunities for the other to act. The manager remains the central figure in the episode – frequently enabling events for authorities and frequently having events enabled by others, including co-op members. Overall, more dominance appears in the agent–object network, more reciprocity in the agent–beneficiary network.

The networks in Table 2 probably are inaccurate representations of the co-op’s structure since they emerge from a single episode and depend on our rendition of events in a national culture different than our own, based on a brief narrative. Nevertheless, the exercise shows

<table>
<thead>
<tr>
<th>Agent</th>
<th>Object</th>
<th>Beneficiary</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B  M  C</td>
<td>M  R</td>
</tr>
<tr>
<td>Banker</td>
<td>1  2</td>
<td>3</td>
</tr>
<tr>
<td>Manager</td>
<td>1  5  1</td>
<td>4  2  1</td>
</tr>
<tr>
<td>Chair</td>
<td>1  3</td>
<td>1</td>
</tr>
<tr>
<td>Member</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Registrar</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>
that organizational events establish multiple kinds of networks, each of which provides a different perspective on structure.

CONCLUSION

The Event Frame posits eight factors to be considered whenever an organizational event is at issue. Conscientious attention to these factors fosters clarity and breadth of perspective when considering an event. The eight factors provide a foundation for theoretical explorations, and through one such exploration we showed how collaborative actions of individuals bond to become instruments of action by other individuals. Observations of events, coded into Event Frame categories and entered in a computer database, provide a wealth of details for analysis, and the analytic results offer insights into organizational structure and processes. This empirical use of the Event Frame expands the traditions of scientific management (March and Simon, 1958, pp. 12–22) and motion study (Shaw, 1971) to all facets of organizational process, using a system of notation that covers managerial and transactional events as well as manufacturing.

The Event Frame provides field researchers with a standardized format for recording events. Though too complex to apply while a quick sequence of events unfolds, the Event Frame is an excellent tool for later expansion of short-hand notes into a detailed, permanent description of events. The computer implementation makes the process faster than transcribing notes and prompts a range of thoughts about what happened while the events still are fresh in memory. Observations from multiple field workers can be merged into a combined database, so it is feasible to deploy an ethnographic team in order to obtain a detailed, qualitative record of an organization’s process.

With the aid of the Event Frame, organizational processes could be qualitatively modeled (Heise and Durig, 1992) and examined through computer simulations. After establishing a catalog of entities and people, one would identify the productive relations that must exist between elements in Event Frame categories. This would set the preconditions of events, define how events enable other events, and provide a basis for specifying a transactional grammar of the organization (Salancik and Leblebici, 1988). A computer simulation would report
sequences of events that might happen. Experience with the Event Frame and its elaborations is required before such models and simulations become a reality, but analysts in the 21st Century surely will be able to preview an organization's potential pathways, gaining detailed inventories of personnel, materials, and risks that are involved in each possible agenda.

REFERENCES


ORGANIZATIONAL ACTIONS


