What is an agent supposed to be?

Simon Kasper
Forschungszentrum Deutscher Sprachatlas
Philipps-Universität Marburg
simon.kasper@staff.uni-marburg.de
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1 Introduction[1]

'Agent' has been one of the most frequently discussed notions in linguistic theories since the 1960s. This is attributable to the observations of theorists like GRUBER (1965) and FILLMORE (1968), according to which some semantic features of object concepts or objects (in a broad sense, including humans and animates in general) have predictable syntactic effects under certain definable conditions (e.g., depending on the predicates/verbs with which these objects occur). One of the earliest manifestations of such predictions, stated as a rule here, is the "subject selection rule" proposed by FILLMORE (1968, 33). Given the "case frame" or argument structure of any (verbal) predicate,

(1)   "If there is an A[gentive deep case, SK], it becomes the subject; otherwise, if there is an I[nstrumental deep case, SK], it becomes the subject; otherwise, the subject is the O[bjective deep case, SK]."

(1) formulates a generalization according to which all arguments of any verbal predicate which fulfil the requirements of being attributed to the agentive deep case or the thematic role of agent will behave alike syntactically. The usefulness of such a notion is obvious: it allows predictions about how argument structures of predicates are syntactically realized. It is not only the choice of the subject that is presumably made possible by the introduction of the notion of 'agent'. The agent role has also been suspected of involvement in the restriction of syntactic operations like passivization (e.g. JACKENDOFF 1972), control constructions (e.g. FOLEY/VAN VALIN 1984, VAN VALIN 2005), split intransitivity (e.g. ZAENEN 1988, DOWTY 1991), imperatives (e.g. JENSEN 2003), among many other phenomena. It is also often mentioned in connection with the notion of 'transitivity' (e.g. HOPPER/THOMPSON 1980). It is clear from the short listing above that the thematic role of agent plays a crucial role in the relations between semantics and syntax. It is by far the most prominent thematic role of those proposed in the literature. Significantly, it is also the most controversial and the fuzziest one yet. Is there a possible answer to the question what an agent really is? The answer proposed here will be a clear 'yes and no'.

The goals of this paper are the following. In the next sections, it will be shown why there could not be any agreement to date about the content of the agent role. Trivially, the divergent conceptions of the agent role are a result of completely disparate theoretical presuppositions. These theoretical presuppositions will be distilled from the agent conceptions proposed in the literature. I conceive some of them to be rather problematic means with which to approach agentivity. In addition, the fuzziness of the notions involved in defining agents should not be underestimated as a factor which may well hinder the clarification of the concept in question. In section 3 several preliminary clarifications will be made to enable the setting up of a framework, on the basis of which those theoretical presuppositions considered relevant to a

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definition of agent shall be formulated. Section 4 then outlines a concept of 'agent' which relies on this framework.

The basic idea to be defended is that the concept of agentivity draws from two different but intermingled domains of knowledge, namely those gained through perception and those through sociocultural praxis. Knowledge gained via one's involvement in a sociocultural praxis, or pragmatic knowledge, will be shown to be particularly dependent on two factors: culturally conventionalized mechanisms for attributing features and properties to others plus factors like present purposes, focus of attention, and interests of the speaker when he or she makes linguistic use of the notion 'agent'. In contrast, knowledge gained via perceptual experience will be shown to be underspecified with respect to these culturally conventionalized mechanisms. The latter are then imposed onto the former in a top-down manner. Any objectivist conception of the notion of agent is therefore deemed to be at best questionable. Under the term "objectivist" I sum up views claiming that perceptual experience provides complete insight into the relations holding between the objects of perception, and/or views claiming that these relations are the same in reality and in the mind. My discussion of extant agent concepts (sections 2 and 3) should be seen in this light; this discussion is a goal-oriented prerequisite for the agent concept proposed in the final section.

2   Proposed features of agents

Roughly, thematic roles are generalizations about the features of the argument(s) of a predicate, whatever their nature, in order to capture regularities between the semantic representation and the syntactic realization of that predicate-argument structure (cf. KASPER 2008). This deliberately leaves undetermined the precise relationship that holds between a predicate and its argument(s). DOWTY (1991, 552) defines the relationship as "a set of entailments of a group of predicates with respect to one of the arguments of each".[2] The concept of 'entailment' in principle allows the features of the arguments to be of any conceivable kind, restricted only by the nature of predicates *per se*. Consequently, the features of arguments can involve aspects of meaning, use, causal organization, temporal organization, ontological status, and psychological status, to name just a few. (One question that arises at this point is whether all these kinds of features can be reduced to one another or to the domains of the classical linguistic disciplines of semantics and pragmatics. I set this question aside with the objection that, presumably, the boundaries of these terms and the distinction between semantics and pragmatics are not and cannot be precisely defined. Section 3 will address aspects of this question.) Of the many features which have been put forward as typically agentive, the most prominent are discussed in the following subsections.

2.1   Animacy

Animacy is one of the few agent features inherent to the object being referred to, e.g., *the child* will always be animate irrespective of the role it plays with respect to some predicate. The same is not true for, e.g., intention, the presence of which depends (for now) on the predicate. GRUBER (1965, 32) identifies animacy as some kind of secondary agent feature. In his theory it is implied by a primary agent feature of 'wilfulness', i.e. not all animate entities

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[2] "Entailment" (also "logical implication") is a logical term, according to which "one formula entails another if in every possible situation (in every model) in which the first is true, the second is true also." (DOWTY 1991, 552).

are agents but all agents are animate. The same is true of JACKENDOFF'S (1972, 32; 1987, 396) treatment of agents. It is remarkable that both GRUBER and JACKENDOFF were aware of the possibility of conventional implicature in the case where a predicate is ambiguous between an agentive and a non-agentive reading and the argument in question is animate. These arguments may be interpreted as agents. This insight is usually attributed to HOLISKY (1987), but in fact GRUBER saw it, too.

FILLMORE (1968, 24) was severely criticized for his "case for case" approach, in part because of his definition of the agentive deep case, as "the typically animate perceived instigator of the action identified by the verb." One could infer from this that all agents are perceived as instigators and, because most instigators are animate but not necessarily so, agents are typically animate. This clearly contradicts GRUBER's and JACKENDOFF's statements. In agreement with the latter, one can also find VAN VALIN's and WILKINS' (1996) concept of agent (which should not be confused with the effector role). Although in their view most predicates are unmarked for agentivity, those which are marked have animate arguments. It remains unclear whether or not this is a necessary condition because the status of the features remains open. Effectors, however, are not necessarily animate.

DELANCEY's work on agentivity is based on a prototype account and allows different degrees of agentivity. According to DELANCEY (1984, 184), it "is well established by now that lack of volition on the part of the cause of an event constitutes a deviation from canonical transitivity (of the clause) and agentivity (of the clause)". DELANCEY (1990, 142) states that an "[a]gent can be identified with the ultimate identifiable cause". It seems, then, that more prototypical agentivity is tied to an animate argument but that inanimate agents are also possible, which consequently means a deviation from the prototype. Finally, in PRIMUS' (1999, 36 et sqq.) and GRIMM's (2005, 20 et sqq.) accounts, which are more or less based on DOWTY's (1991), animacy is not part of the definition of a (prototypical) agent but is clearly implied/implicated. There is obviously no consensus over the role of animacy in the discussion surrounding the definition of agent. The problem is even more severe when one considers the question of what animacy actually is. According to classical philosophical assumptions there is no problem at all. The notions are complementary. There are living things and non-living things, but nothing in between: the flora, as a critical case in folk psychologies, is to be classified as either animate or inanimate. Patterns in most languages point to a different classification, however. E.g. DELANCEY's (1981, 627-628) typological research led him to the formulation of the following animacy hierarchy:

(2) $1^{st}/2^{nd}$ person > 3rd person humans > non-human animates > inanimates

The hierarchy in (2) could be extended even further by differentiating between pronouns, proper nouns and common nouns. Research in Cognitive Psychology and Psycholinguistics also shows that the classical classification is insufficient to account for linguistic data (cf. BORNKESSEL-SCHLESEWSKY/SCHLESEWSKY 2009 for a brief overview) and that distinctions made by humans between the degrees of animacy of, say, humans and animals rely on cognitively "real" (be they categorically or functionally driven) distinctions (cf. WARD 2006, 215-216). PRIMUS (in print) draws from psychology (DAHL 2008) the thesis that the category "animacy" essentially includes the distinction between person and non-person, whereby the prototype of person is the 1st person singular, the "I" which is the measure of the "personhood" of any other entity. In addition, a high degree of personhood (i.e., similarity to the self) correlates with the ability to bring about actions, so a prototypical agent is thus an object "high in personhood", i.e., high in its degree of similarity to the self. It can, however, be asked whether it is appropriate to term both the classical and the "psychological" notion in question 'animacy' or whether they are distinct notions.

Linguistically, some kind of "animacy" hierarchy seems to be involved in the morphosyntactic coding of the participants of transitive events. Prototypical agents tend to be unmarked in these constructions while deviations from prototypicality lead to markedness of the argument in question. Animacy is closely related to the prototypical agent, given that the first argument in a maximally transitive construction is considered (by HOPPER and THOMPSON 1980, 252-253) to be volitional, high in potency with respect to agency and "animate", if not human. For DELANCEY (1984, 185) and LANGACKER (^{2}2002, 209), volitionality of the agent is also a necessary condition for maximal transitivity. These authors treat animacy as an epiphenomenon of other features, chiefly volition. In contrast, COMRIE (1981, 121) and LAKOFF (1987, 54) mention animacy as an immediate feature of an agent in maximally transitive events.

As a result, the concept of animacy as a linguistically relevant notion is hard to capture satisfactorily. There is no consensus at all on whether it is a necessary agent feature. Although there is sufficient evidence for a mentally present scale of degrees of "animacy" (or some related concept, e.g. "empathy" [DELANCEY 1981]), it is uncertain how typologically stable such a hierarchy is and whether its mapping to linguistic structures is straightforward and regular across languages. If it is not stable and the mapping is idiosyncratic, 'agent' as a linguistic notion is cross-linguistically relative (cf. SCHLESINGER 1989; the question of universality will be addressed in later sections). Furthermore, we do not know whether agentivity is inevitably tied to transitivity (see below) or whether it can be defined on independent grounds.

2.2 Sentience

The notion of 'sentience' is ambiguous, encompassing either the "actuality of sensation" or the "capability of sensation". Hence, its status as a predicate-dependent or predicate-independent feature of the object (concept) to which agentivity is attributed is also ambiguous. Sentience as a presumed agent feature is tied to the proposals of DOWTY (1991) and his successors (PRIMUS 1999, ACKERMAN/MOORE 2001, GRIMM 2005).[3] DOWTY himself does not resolve this ambiguity. As a consequence, both readings can be found in the literature. Propositional attitude verbs, psychic verbs and perception verbs entail that their argument or at least one of their arguments "is capable of appreciating an entertaining experience" (ACKERMAN/MOORE 2001, 32), i.e. the referent of the argument is capable of sensing but not necessarily actually sensing. For PRIMUS (2006, 55) sentience "comprises an emotion, a sensation, a specific mental attitude or the awareness of the situation denoted by the verb", and hence implies actual sensation.

The usefulness or relevance of sentience for the notion of 'agent' is shown by DOWTY with respect to "nonstandard lexicalizations" (DOWTY 1991, 581).

> There is in fact one relatively small group of verbs, including *receive*, *inherit*, *come into* (*an inheritance*), *undergo*, *sustain* (*an injury*), *suffer* (*from*), *submit to*, *succumb to* and *tolerate*, which seem to have Goals (*receive*, etc.) or Patients (*undergo*, etc.) as subjects, but Agents or causes as other arguments.

According to DOWTY (1991, 581), "it is noteworthy that almost all entail that their subject argument is sentient" and he suggests "that sentience might in some cases be a sufficient entailment to license an argument's lexicalization as subject, no matter how many P-patient entailments it has […]." In addition, following DOWTY's (1991, 579-580) analysis of stative psychic verbs, each of these verbs' two arguments has one proto-agent property, namely

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[3] Beside that, it also plays a role with respect to COMRIE's (1981, 55) treatment of 'control'.

sentience on the side of the experiencer and causation on the side of the stimulus. In this case, it is sentience that is supposed to "rule out" causation as the more prominent proto-agent feature and therefore make the experiencer the "better" subject. It remains open as to why there are stative psychic predicates with experiencer objects (e.g. *please*, *disturb*), although sentience is the only proto-agent property of the object and causation of the event is the only proto-agent property of the stimulus.

Additionally, in this analysis there seem to be virtually no grounds on which to decide whether sentience is indeed the operative feature, since every sentient being is also, e.g., animate, or in some sense the source of the psychic state, or even the proximate cause of the psychic state described by the verb or even something else. This objection, however, affects most of the psychic states attributed to agents and is rooted in my scepticism about the definite identifiability of psychic categories *per se* and therefore about the attribution of psychic states to other minds as a means of characterizing agents (see subsequent sections for explication).

DOWTY (1991, 602) suggests that sentience is one of the features (the proto-agent properties) which cumulate in the supercategory of 'proto-agent' in a child's mind early in language acquisition. He argues that this is due to the frequent input of highly transitive sentences received by the young child. He (1991, 602) states that

> in the environment of the very young human, such categories [the proto-role entailments, SK] coincide empirically in the majority of cases: most of the events that are described linguistically to a young child probably have a human 'agent' that is a causal force AND a sentient and volitional participant AND an entity that moves (and a preexisting entity) simultaneously, and similarly for Proto-Patient categories.

At least in his article, DOWTY does not base these claims on empirical data. To my knowledge the input of verb frames received by children as well as the verb frames produced by the children themselves in early language acquisition are neither frequently highly transitive nor do they frequently involve prototypical agents or patients. Rather, the verb frames of the sentences heard and produced most frequently involve verbs the semantics of which do not entail prototypical agents or high transitivity. It is verbs like *go*, *see*, *put*, *want* which are the most frequent in the children's input as well as their production (by children) once they have been learned (cf. NAIGLES/HOFF-GINSBERG 1998, 104; NINIO 1999; VÁZQUEZ ROZAS 2007, 22).

2.3   Volition

With 'volition' one has a problem similar to that with animacy: what is volition? Some authors seem to use it synonymously with "will", others obviously distinguish between the two. CRUSE (1973, 17) states that included in the notion of agent is – among others – the idea of 'volitivity', which "is present when an act of will is stated or implied." In contrast, JACKENDOFF (1972, 32) notes, "[t]he Agent NP is identified by a semantic reading which attributes to the NP will or volition toward the action expressed by the sentence." For CRUSE, "wilful" and "volitive" seem to be synonymous, while for JACKENDOFF they are not. But where he sees the difference remains open. Tentatively, by "volition" is meant something like "the capability to choose among the bringing about or the refraining from the bringing about of the event described by the verb". At any rate, most authors agree as to the involvement of volition/wilfulness in the notion of agentivity. Most theorists working with a proto-role account of thematic roles also use volition/wilfulness as main characteristic of agents (VAN VALIN/WILKINS 1996, DELANCEY 1990, LANGACKER [2]2002, DOWTY 1991, among others), but – given the notion of 'prototype' – not as a necessary condition, in part because inanimate

(and therefore unvolitional) beings can "act" like agents, because, as Dowty (1991, 552) notes, "car accidents also kill". Other authors completely reject it as an agent feature, because of its emotive connotations in the sense of "wishing the event named by the verb" (PRIMUS 1999, 36) or because it is simply not considered to be a necessary condition for being an agent (in a non-proto-role account) (SCHLESINGER 1989, 194).

As with animacy, then, there is ongoing discussion as to whether or not volition/wilfulness is a feature of an agent. Like sentience, it is never really clear that volition is a criterial feature. DOWTY (1991, 552) illustrates volition as the criterial feature in the difference between *kill* and *murder*. One question that arises is that of the grounds on which one could decide whether it is volition or sentience or some other feature potentially distinguishing animate from non-animate beings that makes the difference between, e.g., killers and murderers. From this perspective it seems that volition is a concept standing for whatever it is that is supposed to set human actions apart from "actions" of other animate beings. Such a criterion has not yet been identified, as far as linguistically relevant categories are concerned. CRUSE (1973, 17), referring to GRUBER (1965) seems to identify his volitivity with the presence of some purpose. Here, the edges of what volition is begin to blur, since "volitionally" now becomes nearly interchangeable with "intentionally" and "on purpose", e.g. when GRUBER (1965, 132) states that an agent "wills the action and intentionally effects it." And where intention and volition are differentiated (VAN VALIN/WILKINS 1996, 313) the edges between volition and sentience begin to blur.

The talk about psychological notions in the characterization of agents leads to a more general question, already touched above: Where do we gain such knowledge from? How can we know that the subject of agentive verbs act volitionally or sentiently? How can we be so sure in ascribing particular psychic states to others? That we actually do so is not in the least a matter of course, since there are languages in which a refusal to attribute volition to 2nd and 3rd persons is codified because of the uncertainty of the appropriateness of this attribution (DELANCEY 1990, 145). It is indubitable that we have knowledge (or better, beliefs) about minds of others, but beliefs may differ between peoples, cultures, ages. One should bear this in mind when talking about agents who **are** sentient, who **are** volitional, who **are** acting intentionally etc. (see section 3).

2.4   Intention

In general, 'intention' is one of the most difficult notions not only in linguistics but also in philosophy (cf. SETIYA 2010). Authors using the term mostly presuppose the knowledge of what "intention" means or which philosophical stance they take, and it is hard to find passages in linguistic works in which it is explicated (GRUBER 1965, VAN VALIN/WILKINS 1996, DIXON 1979, HOLISKY 1987, among many others; a commendable exception is JACKENDOFF 2007). As already noted, 'intention' is a notion which is often hard to distinguish from volition/wilfulness or purposefulness. As PRIMUS (1999, 38), referring to DOWTY, notes, "[t]he interrogator's intention is a necessary condition for being interrogated and this follows from the semantic content of the verb *interrogate* […]." In other words, the intention to bring about an event is the cause of the event. The question that arises is whether it is less adequate to say instead of intention that it is the interrogator's purpose, will, plan or his actualization of the capability of self-propelled action that is a necessary condition of being interrogated. And since PRIMUS' most central predicate for agentivity, [CONTROL] is identified with intention ("thematic structure is built up from more primitive predicates such as CONTROL (i.e. INTEND) […]", [PRIMUS 1999, 48]), it remains unclear what intention precisely is. Again, it seems to stand for whatever it is that is supposed to set human actions apart from the "actions" of other animate beings. In VAN VALIN's and WILKINS' (1996) "case for effector",

to have intentions means to be able to plan and to be conscious of one's will (p. 313). Does that mean that intention is sentience plus volition plus means-end rationality? But rationality is treated as independent of intention, since to be rational is both to have intentions and to be "knowledgeable about what the resulting consequences of its acts will be" (ibid.). But how can one be able to plan without being aware of the consequences of one's actions? It is not accidental that it is the attributes 'volitional', 'intentional', and 'rational' which range between 'animate' and 'human' on the scale of likelihood of being conceived of as an agent in VAN VALIN and WILKINS (1996, 314-315). As I have speculated above, this again indicates the attempt to draw a definite line between humans and non-human animates in general and with respect to the agent notion in particular (in VAN VALIN/WILKINS: between agents and effectors). "Transtheoretically", there is a tendency to propose that it is sentience, volition, intention, rationality and the like[4] which distinguish agents, good or prototypical, from non-agents, less good or non-prototypical agents. Mostly, the latter are mere cause(r)s, then.

2.5 Causation

A characterization of what the notion 'causation' means is of course not possible here. Nor is it the purpose of the present paper. What shall be asserted, however, is only that the concept of causation is crucially involved in most, if not all, approaches to the notion of agent. What do these theorists mean by "causation"?
GRUBER makes a distinction between a causative agent and a permissive agent. A causative agent is one who "wills the action and intentionally effects it" (GRUBER 1965, 132) while a permissive agent "is the willing agent of the act, but rather than being the cause, he permits the act." In other words, a human being exists without whose wilful engagement the event described by the verb would not have come about. (Note that this is formulated in what I have called an "objectivist" manner, since it presupposes the objective truth of the asserted proposition, i.e. one is objectively the cause of the event. This will become relevant in later sections.) This comes close to the literal skeleton for the concept of causation, according to which "a cause is a determining[5] factor for a situation, where by a "situation" we mean a state, change, process, or action." (LAKOFF/JOHNSON 1999, 177). This is little information, since there is no distinction between, e.g. ultimate, mediate and proximate causes, or whether causes themselves are objects or events. But its generality seems to provide the lowest common denominator with respect to the question of what causation means. It fits GRUBER's statement, it presumably fits JACKENDOFF's (1972, 39; but not the later works) "direct sense" of cause he uses for his CAUSE function as well as DOWTY's (1991), PRIMUS' (1999, with respect to CAUSE), DELANCEY's (1984), SCHLESINGER's (1989) and others' conceptions of causation. However, with respect to agentivity, these theorists differ as to what suffices to be an agent. SCHLESINGER's (1989) agent is stripped down to a mere causer, and any additional features like those discussed above do not alter this classification. With respect to its linguistic reflexes then, SCHLESINGER treats inanimate agents and prototypical human, volitional, intentional, etc., agents alike. In PRIMUS' (1999) account, causing the event does not suffice to qualify as a prototypical agent. For that, the causer must be animate, yielding an implicated agent with intention (i.e. a CONTROLler). For FILLMORE (1968, 24), the causer – as in other proposals (e.g. GRIMM 2007) disguised in the metaphorical notion of "instigator" (literally one who 'urges on', 'incites', 'rouses') – is "typically" but not necessarily animate. Besides the controversy regarding agentivity within the literal skeleton of causation, there is a higher-order controversy with respect to the adequacy of this concept of causation. TALMY

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[4] Another prominent candidate is 'control' (as a primitive notion in DIXON 1979, COMRIE 1981, DELANCEY 1984, HOLISKY 1987; as a decomposed notion in PRIMUS 1999, GRIMM 2005).
[5] lat. *determinare* 'to fix the limits of', 'set boundaries to', 'delimit'.

(1988; 2000) offers a concept of causation – "force dynamics" – that rests on a "literal" skeleton distinct from LAKOFF's and JOHNSON's, namely on the interaction of two opposing forces, an "agonist", who has some tendency towards performing an action, and an "antagonist", who blocks or hinders or in some other way opposes the agonist. The way in which the opposition is characterized determines how the literal concept is worked out.

Even though both LAKOFF and JOHNSON and TALMY claim something like cognitive significance for their proposals, their conceptions of causation differ noticeably. Both, I presume, modify Aristotle's notion of 'efficient cause', grounded in an experientially based semantics. One can nevertheless not infer from this that, in evaluating the role of causation in agentivity, the discussion is confined to efficient causation, as shown by the examples of, e.g., DOWTY (1991) and PRIMUS (1999) show, who instead make use of teleological explanations.

This leads to another uncertainty with respect to the address of causality. What exactly does the agent cause? Is it the coming about of the event described by the verb or is it the coming about of the event described by the VP or is it the change of state in the object argument? And are there implicational relations between these? DOWTY (1991, 572) lists both causation of the event and causation of a change of state in another participant under his proto-agent properties, connected by an "or". This suggests that he considers them as equipollent with respect to their contribution to prototypical agentivity, which, in turn, would presumably conflict with his comments on the role of transitivity (see above), since causing an event does not necessarily imply the presence of a proto-patient. Moreover, the causers of an event and a change of state in the other participant do not necessarily coincide. When I say *Peter burned the fir tree* it is Peter who is the ultimate causer of the event but the fire which proximately caused the change of state in the fir tree. We have here the difference between an ultimate cause and a proximate cause which are dealt with in the same way. LAKOFF (1987), LANGACKER ([2]2002) and DELANCEY (1990) take into account this distinction, where being the ultimate cause characterizes a prototypical agent and the absence of an ultimate cause or of a patient are deviations from the prototypical agent (and from the transitive event, respectively). In PRIMUS' (1999) account of agentivity, it is the distinction between [CONTROL] and [CAUSE] in which the differentiation between causing an event and causing a change of state in another participant is coded.

Again, it should be noted, that no elaborate concept of causation is being offered here. As has been illustrated, one reason as to why there is no agreement on the question of what an agent really is lies in the difficulty of characterizing what sentience, volition, intention and even animacy, now complemented by causation, actually are. These notions are barely, if at all, clearer than the concept of agentivity. The goal of this section was to show this. The fundamental problems with which most of the proposals are grappling are obviously the traditional ones rooted in the philosophy of mind. This is also true for causation/causality.

3 Dimensions involved in agent proposals

In this section, some "dimensions" along which the concepts of agent have been spun shall be discussed. An attempt will be made to show that in order to recognize why language structures work the way they do, several notions involved in the conceptions of agentivity can be safely excluded, since they are only brought into play when presumably problematic theoretical stances are adopted.

But first, something should be noted which is, or should be, actually self-evident. When linguists talk about how a typical, competent speaker-hearer (SH) of a particular language tacitly conceives of an agent in her language depending on her experience of an "external reality", this talk is highly refracted. The metaphorical term "refraction" shall designate here the fact that the linguist's notion of agent is always the result of several methodical,

philosophical, and theoretical assumptions which determine what an agent is on the object level. The "way" from the object level to the linguist's theory roughly leads from the entities in the "real" world involved in situations via the sense organs to the mind of the perceivers, from there into actual utterances, from there (via abstractions and idealizations of both speakers and utterances) to the linguist's data, from there to the linguist's hypotheses, from there to the linguist's theory. The linguist's agent, i.e., what an agent is in her discourse, is the product of, at a minimum,

(i)   an abstraction from actual SHs, given that a "typical" SH is not a concrete entity,
(ii)   an abstraction from actual SHs, since a competent SH is an idealization of the former,
(iii)   a decision about what knowledge is and what tacit knowledge speakers possess and how these are to be specified,
(iv)   a generalization from at most a few languages to all languages,
(iv)   the selection of a correspondence theory of mind and linguistic structure,
(v)   the selection of a correspondence theory of world and mind/brain,
(vi)   a decision to believe that cognition is mainly *xxx*-ly[6] specified,
(vii)   the selection of an *xxx*-ic[7] stance.

Points (i) and (ii) could be argued to result from reasonable methodological considerations and they are not objected to here. However, each of the points above naturally results in further presuppositions. And even if one rejects one or more aspects of this list, the rejected aspect(s) would be replaced by other, more or less theoretically loaded, assertions. The linguist's talk about what agents are is interspersed with implicit standpoints (common sense) which, at least, must be traceable.

3.1   "Real" agent versus "cognitive" agent

I will now proceed by demonstrating why an objectivist manner of speaking about agents might be misleading due to the fact that agentivity is something that is attributed by one to another. Let the definition of agent be "volitional causer" for the purposes of this subsection. In most of the literature on agentivity one can read statements like "In sentence S *x* is the agent of verb *y*" or "an agent is a volitional causer of …". My objection is that talking about agents in this way indicates a lack of awareness of the "refractedness" of one's talking about agents. Literally taken, let us evaluate what such expressions mean (when there is no evidence for a contrary interpretation). We are sure that we are talking about a category, agents, which is, at least in part, a linguistic notion or, more precisely, a notion from the interface between semantics and syntax. We have learned to regard language as a mental phenomenon. Linguistic categories in this sense are mental phenomena. This means that talking about linguistic categories like agents is talking about something that is in some way mentally "there". This, in turn, entails no assumptions at all about the relationship or kind of correspondence between mental contents and external world situations or objects. From my perspective, methodological wariness would dictate not making a commitment to a strict correspondence between mental and external world contents. The problem is that the way of talking indicated above readily or unconsciously makes this commitment. The use of indicative mood with no further specifications, as in "agents are volitional causers" or "*x* is an agent/volitional causer", asserts that "agent" refers to some external world entity and not to something mental. When talking thus, a person (e.g., the linguist) identifies part of an

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[6] Candidates for "*xxx*-ly" can be thought of as "evolutionarily", "experientially", "innately", among many others
[7] Candidates are "cognitivistic", "realistic", among others.

expression (e.g., the NP *Peter*) of a speaker (e.g. Chuck) who categorizes *Peter* as a volitional causer, with *Peter* being objectively an agent. One can illustrate simply why this is severely mistaken with respect to the notion of 'agent'. We know that the presence of an agent has specific linguistic reflexes in certain constructions. Consider the case if Chuck categorized *the volleyball* as volitional causer in a certain construction. Then Chuck's categorization of *the volleyball* as volitional causer with respect to certain constructions would always have the agent-specific linguistic reflexes it would have if it were objectively an agent, even if it will presumably never be the case that a ball will objectively be a volitional causer. What is happening here is that "cognitive" agents are being confused with "real" agents. If one agrees that mental structures, not the structure of the external world, are encoded in language, then linguists should unambiguously talk about what I have called "cognitive" agents, because the default interpretation of the term "agent" is the "real" agent interpretation. The facts (i) that agentivity is attributed by humans and (ii) that these attributions may be inappropriate illustrate that an objectivist manner of speaking might misleadingly trigger a objectivist conception of agentivity.

What does this mean with respect to an approach to agentivity which makes use of entailments in the sense of DOWTY (1991)? As far as it is part of a mentalistic linguistic framework (i.e. the proposal claims to be significant with respect to human cognition), the entailments would consist of cognitively significant categories. On the one hand, DOWTY (1991, 600 sqq.) is not cagey about the psycholinguistic relevance of his findings. However, DOWTY's proto-role proposal is based on model-theoretic semantics (p. 551) which are explicitly committed to a objectivist stance unmediated by the mind (e.g., MONTAGUE/SCHNELLE 1972, DOWTY 1979), i.e. natural language predicates and their arguments refer directly to situations and things (in a broad sense) in the external world, and consequently the materially implicated proto-role properties are properties "in" the external world. This means, consequently, that the proto-role entailments are also affected by the non-identity between mental categories and "things" in the external world. This can be illustrated with respect to the notion of 'causation' which is one of the proto-agent properties. It is in no way proven, and it is actually dubitable that "real" causation – whatever it is – can be identified with some human mental concept of causation. We dive even further into the deepest ontological problems when we ask what the difference between "real" "independent existence" and "independent existence" is in cognitive terms, not to mention the psychological notions.

This should only serve as an example of the way agents are talked about and to illustrate what strong commitments are implicitly made about the correspondence of mental and "real" world categories.

3.2 "Real" agent versus perceived agent

This distinction is closely related to the former. If linguistic structure somehow reflects mental structure, then "truths" about linguistic structure are truths about the mind, not about the external world. There is evidence that categorization of entities as agents is in part based on perception.[8] Since perception is fallible, one can expect that "real" agent and perceived agent sometimes diverge. One should bear in mind, however, that the entire meaning of 'agent' cannot presumably be captured on perceptual grounds alone. For present purposes it suffices to say that intentions and volitions are not visible. Nevertheless, in assessing a situation, one decides whether one has witnessed a killing (accidental) or a murder (intended) in part on the basis of perception. Remember GRUBER's (1965) distinction between causative

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[8] This may be an underestimation. But for my argument, the assertion need not be unnecessarily strong.

and permissive agents. Now imagine a situation in which one lets a hammer fall from a scaffold so that it hits someone standing on the ground. The hit person dies immediately. Part of one's categorization between 'accidental' and 'intentional' will be based on what one has seen, another part will be based on other knowledge. Something like this distinction between "real" and perceived agent is presumably what FILLMORE (1968, 24) had in mind with his "typically animate **perceived** instigator", although he was severely criticized for his really clear-sighted idea (e.g. CRUSE 1974). Since deep cases are conceived of as "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 […]" (FILLMORE 1968, 24) the actual surface structures of some deep case relationships reflect concepts of the speaker, beliefs of what is going on in the world but in no way facts about what is objectively going on in the world. I am not inclined to agree with FILLMORE in many respects, but a distinction between "real" agents and perceived agents seems crucial to me. Again, the manner of talking about agents is mostly an objectivist one: the default interpretation of expressions containing predications about agents is that they are "real" agents.

3.3 "Real" agent versus "judged" agent

The distinction recently made between perceived and "real" agent can be understood as a specification of the distinction between "real" and "cognitive" agent, presuming that cognition is partially based on perceptual experience. However, these distinctions are not sufficient for explaining some further data. Our decisions about whether to classify someone involved in a situation as an agent cannot be made on grounds of perception alone. (This was illustrated by the example of the falling hammer above.) In addition, we have no reliable criterion for assessing who objectively is the agent in a given situation. (Where should it come from, given the objections made above?) What evidence, then, do we use in order to decide (consciously or not) whether or not an agent is involved and, if one is present, who that agent is. It seems reasonable to think of the criteria according to which these decisions (conscious or not) are made as (tacit) knowledge. As such it must be somehow present in mind. For reasons of simplicity, let us think of it as "actional" knowledge which is gained through learning processes (including education) within and as sociocultural praxis. To illustrate what I mean by this consider the following longer quote:

"With respect to the actions of the persons closely attached to the child that are executed in its presence, the following factors play an important role: demonstration and imitation as well as commentaries on what is demonstrated, corrections of what was imitated inaccurately, praise for accomplishments of the child etc. That means that demonstrating and imitating are verbally conducted by these persons. This attendance when imitating consists in, for example, praise or reprimand, encouragement or correction, in short: a positively or negatively sanctioning commentary. Casually, the child is schooled in apprehending and executing those activities which are attributed to it as accomplishments or misaccomplishments[9] by their closely attached persons. With this, the following appears as a primary and important criterion for the presence of an action: (an) action is what is attributed to the actor as credit or fault by other humans." (JANICH 2001, 28; my translation).

What is crucial here is that the attribution of credit and 'fault' ("Verdienst" and "Schuld") depends on the belief ("Meinung", JANICH 2001, 29) of the attributor. Who is an agent, then, depends on who is judged as agent by the speaker, independently of what might objectively be the case.

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[9] An action that is executed in the wrong way. For the present purposes: an action is executed successfully if the result is praise and it is not executed successfully (= misaccomplishment) when the result is not praise.

3.4 Are there "real" agents?

Language can be, and actually is, studied in order to find out something about the human mind. As such, for many linguists the study of language is part of psychology (CHOMSKY 1968). There is, however, at least one important aspect which language and the common subject-matters of cognitive psychology do presumably not share. Language is – in contrast to the faculties of perceiving in each modality, memorizing, learning, attending, being conscious, solving problems and reasoning (at least spatially) – not "for free". The acquisition of a language is inextricably tied to social contact or, to be more precisely, to a common conceptual ground and joint intentionality (TOMASELLO 2009, ch. 1, ch. 4). A language, and the structures it is built of, are therefore to a certain, albeit minor, degree social constructions, i.e. they reflect (tacit) beliefs grounded on cultural praxes. I would tentatively suggest that attribution of agentivity is based mainly on perception. Provisory, and putting aside the problems of what causation is, an agent is mostly a causer. Since (perceived) causes precede effects, agentivity is most likely to be attributed to (perceived) entities at the beginning of any (perceived) event, i.e., entities which are considered to have set in motion what is happening or which are self-propelling. The latter, one would assume is "objectively" restricted to animate beings. However, contrary to this intuition, it seems that humans attribute animacy, i.e., the capability of self-propelled motion (CSIBRA 2008), to inanimate things without further ado. When it comes to the question of the agentivity of other humans, it seems that judgments based (tacit) actional knowledge gained via sociocultural education in the sense indicated in the quotation above are somehow superimposed upon perception. Somebody who is audibly belching will presumably be identified as the source of the noise in any circumstances, but upon this perceptual judgment an additional judgment as to whether or not the belcher is to be blamed for what she/he has "effected" (in some sense) may be superimposed. The latter attribution is decisive for linguistic structure since it decides whether or not certain linguistic operations (e.g., passivization) are possible.

At least with respect to linguistic inquiry (which is also, but not exclusively, a mentalistic inquiry) as opposed to, e.g., action theories in analytic philosophy, one can with a clear conscience state that there are no "real" agents and the notion of 'agent' is in fact related to perception and sociocultural praxis. In other words, even if there were "real" agents, this would not be the kind of category influencing linguistic structure, since "real" agentivity is not identical to the notion of agentivity as perceived and enacted in sociocultural praxis.

3.5 The relation between predicates and arguments

As I have tried to show elsewhere (KASPER 2011) the prevalent means of description of predicate-argument structures are highly problematic from a methodological (and presumably an empirical) point of view. They carry about with them ontological and methodological implications which are not consistent with a research program that is dedicated to exploring the relation between language and mind. The classical view is originally that of a generalized mathematical function which must be saturated by one or more arguments (e.g., "$f( ) = 2 \cdot ( )^3 + ( )$", cf. FREGE 1962a), i.e. in terms of a linguistic semantics, an argument structure consisting of a relational expression and one or more ordered subject expressions [R (a, b)]. The relational expression imposes the so-called selectional restrictions on its subject expressions (FODOR & KATZ 1964). FREGE's motives were to rid natural language of its well-known imperfections in order to establish a pure reasoning which in turn should serve to find

scientific truths and ways to get to them. The result, an "arithmeticated" semantics, found its way into natural language explanation, carrying with it all the implications of truth-functional logic, among them the dependency relation between predicate/function/relational expression and argument/subject expression, as well as the objectivist stance. To my knowledge, both imports from truth-functional logic to natural language explanation, namely the unidirectional dependency relation and the objectivist stance, have never been sufficiently reflected upon in the context of the descriptive means used in linguistics. Of course, there are prominent proposals explicitly rejecting the objectivist stance (e.g., LANGACKER's Cognitive Grammar, LAKOFF 1987, LAKOFF and JOHNSON 1980, 1999, Cognitive Linguistics as a whole, cf. GEERAERTS and CUYCKENS 2007) but the use of means of description seems to be as confused with respect to ontological orientation as is the way of talking about agentivity, as has been shown above.

In sum, the use of descriptive means which were (a) invented for the purpose of scientific progress *per se*, and (b) objectivist in ontological orientation, seems to have questionable legitimation for a description of the cognitive structures underlying natural languages.

What are the consequences for our notion of 'agent'? The dependency relation between predicate and argument must be re-examined. The newly established relation must then be taken into account in order to determine the role of thematic roles in general and that of 'agent' in particular. It should be noted that the criticism above and the ideas indicated below in section 4 are only the starting point for a new proposal concerning the syntax-semantics interface, the details of which have yet to be outlined in future research. It is, however, evident that if the dependency relation is substantially altered, this has a major impact on the theoretical status of what are known as thematic roles.

3.6 Causation again: transitivity

It seems that there is a methodological problem with the notion of 'causation' in relation to agentivity. Namely, it seems to me that there is an ambiguity with respect to the level at which 'causation' is discussed. On the one hand, there is the question of how the relation between a predicate and its argument(s) is to be defined in general. This is clearly a discussion that takes place on the meta-level, since it concerns the descriptive means of a theory. It is thus open to formal logic relations. On the other hand, there is the question of what kind of relation holds between an entity concept and an event concept. This is a problem which has its place ultimately in the mind, and thus on the object-level. If I am right in this, it seems appropriate to apply a notion of 'causation' here that amounts to something like "conceptual causation" or c-causation. What consequences this has for the notion of 'transitivity' must then be evaluated.

Before turning to transitivity, the questions to be touched upon now are (a) how the relation between an entity concept and the event concept which is thought to have been "brought about" by that entity should be characterized, and (b) what effects the answer to this question has for the notion of 'agent'. The discussion of question (a) then has c-causation as subject matter.

How should c-causation be conceived? According to the literal skeleton identified by LAKOFF and JOHNSON (1999, 177) "a cause is a determining factor for a situation". Taking into account my sceptical considerations with respect to objectivist commitments, I would reformulate this as: a c-cause is an object (in a broad sense) or situation which is perceived or conceptualized as the *conditio sine qua non* of another situation. This does not make any commitments to the independent existence of causes in the world but it declares as cause what is (unconsciously) considered to be a cause. Note that in this form causation would be attributed to any single argument of a predicate, taking into account a revised relation between

predicates and arguments, as indicated above. Thus, being the *conditio sine qua non* holds for *Peter* in *Peter has a cold* (*Peter* as possessor or experiencer), as well as in *Peter dies* (*Peter* as theme or patient), and in *Peter frightens Mary to death* (*Peter* as agent or effector). So far, this does not provide any significant distinctions with respect to agents. These come into play when we start to talk about changes of state in some participant in an event, including transitive events.

For the sake of simplicity, I will apply a notion of transitivity in which one object (concept) is conceived of as exerting physical or other force on another object (concept), (not necessarily) c-causing a physical or other change of state in it.[10] This conception is compatible with Talmy's force-dynamic approach to causation. *Peter* in *Peter frightens Mary to death* will now be treated not only as (the conceived/perceived) *conditio sine qua non* of the event of frightening but also as c-causer of the being frightened to death by *Mary*. It is now, trivially with respect to transitivity, that c-causation becomes a matter. That means c-affecting another participant (= attribution of c-causation of another participant's being affected) includes being the c-*conditio sine qua non* (= attribution of the c-causation of a situation).

Naturally, one cannot say that agentivity is biuniquely tied to transitivity. There are thematic role theories in which *Peter* in *Peter frightens Mary to death* is assigned the agent role irrespective of his being "volitional" and/or "intentional" or not. Others would assign the stimulus or some other role to *Peter* in this case. While theories differ as to the question whether "unvolitional" and/or "unintentional" causers are agents it is clear that there are agents that do not c-affect another participant, e.g., runners and dancers. Runners and dancers are c-*conditios* plus something else which is not c-affection. That means that one cannot biuniquely identify agents with event participants that are conceived of as c-*conditio sine qua non*. What this additional feature is will be presented in section 4.

In sum, causation is (experientially based) c-causation, which includes c-*conditio sine qua non* and c-affection where the latter includes the former. C-affection is tied to transitivity. Both are tied to agentivity but not biuniquely, as will be shown below.

3.7   Prototypicality or discreteness or: Are there conceptual agents?

Are agents prototypes? To my knowledge, no one treats 'agent' as a primitive notion. Most cognitively oriented (in the sense of cognitive linguistics) proposals treat them as prototypes (DELANCEY 1990, LANGACKER [2]2002 ["archetypes"], LAKOFF 1987). DOWTY's (1991) and his successors' proposals show aspects of the prototype theory as well as aspects of the traditional necessary-and-sufficient-conditions theory. The DOWTY "faction" presumably shares at least the following assumptions with respect to agents (and/or transitivity):

(i)   Not all agents have the same status, i.e. there are better and worse agents.
(ii)   There are best examples of agents (prototypical agents).
(iii)   Prototypical agents serve as a measure for non-prototypical agents

They share with the traditional theory at least the following aspects:

(iv)   All agents have the same linguistic status.
(v)   Categorization as an agent depends on a fixed number of conditions.
(vi)   Membership in the agent category is a binary matter, at least with respect to their linguistic realization.

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[10] This concept of c-causation is open for extensive metaphorical extension to non-physical domains, e.g. the psychic domain, as in the example given.

Clearly, some of the points (i-iii) and (iv-vi) seem to contradict each other, especially (i) and (iv). This is because 'agent' is, on the one hand, a mental concept and as such (i-iii) apply to it. On the other hand, 'agent' is a linguistically relevant notion, and since most theories mentioned above presumably treat the relevant linguistic categories (as an exception, e.g., CROFT 2001) and the applicability of relevant syntactic operations as discrete and all-or-none matters, the gradation within the category is more or less "binarized" and planed. I.e., the best as well as the worst agents presumably allow for the same range of syntactic operations, because the particular operations are sensitive to the 'agent' category but presumably not to the eventual gradation within it. The question as to whether agents are prototypes or not is then to be complemented by the question of whether or not agent prototype effects have syntactic reflexes and whether or not they affect the applicability of syntactic operations.

GRIMSHAW (1990), VAN VALIN and WILKINS (1996), VAN VALIN (2005), CULICOVER and WILKINS (1986) and JACKENDOFF (1990) are prominent examples of theorists who do not make use of prototype theory in defining agents. At first sight, the RRG treatment of thematic roles looks like it involves prototypes, but Actor and Undergoer are in fact not prototypes, but rather abstractions involving semantic neutralization of thematic distinctions. Thematic relations range along a scale, the actor-undergoer hierarchy (AUH), consisting of five discrete "stations" which are ordered according to decomposed logical (termed so despite the presence of pragmatic implicature in "Arg. of DO") structures of verbs. The AUH unites temporal, thematic and "actional" information and thus unifies what the other theorists mentioned pack into so-called "tiers". They all, including RRG, have in common that 'agent' consists of some psychic feature ranging in one tier, e.g. the above-mentioned volition, intention etc., and a physical, causal, or actional feature ranging in another tier, mostly the feature of causing something. There is, then, no prototype theory treatment present in these proposals.

Where do the diverging treatments of the 'agent' notion come from? One can only suggest – given (i) the prototype-aptness of mental concepts and (ii) the assumption of the discreteness of syntactic categories and the applicability of syntactic operations – that there is a tendency for cognitive semanticists[11] to look at mental structures first and then derive from them the linguistic structures which yield prototypes in their proposals, while the classical semanticists[12] look at language first and then derive the organization of mental structures, which is the reason for the lack of prototypes in their proposals.

Now, what if one is inclined to take a cognitivist stance while looking at language structures first? Where do prototypes come from, then? Putting aside this question for now, I would suggest the following treatment of prototypicality and discreteness of the agent concept, which I will revisit in section 4. We have seen that most agent concepts consist of a thematic part and what I would term an actional part. This cumulates in the standard formulation of an agent being a volitional causer, where we have causation as a concept grounded in (mainly visual) perception and where the causer is some type of source of movement or force, and volition as a notion grounded in education and setting human action apart from mere behaviour and from non-human causation.

With respect to the actional part which, as I have suggested, is highly socio-culturally constrained and which includes the often-mentioned psychic attributions like rationality, volition, sentience and intention, it seems inappropriate to apply prototype theory. It seems more appropriate to consider these notions as superimposed on those mental structures that

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[11] Even though DOWTY would certainly refuse to be called a cognitivist, he must acquiesce in my actual classification due to his treatment of agent as a prototype. The contrary holds for JACKENDOFF who is clearly a "conceptualist" rather than a "classical semanticist". See fn. 11.

[12] Due to lack of a better label this means primarily "non-cognitive semanticist". Maybe one could assert that these theorists are more closely associated with the truth-functional tradition of semantics. VAN VALIN and WILKINS (1996) distinguish "cognitivists" and "semanticists".

are more directly grounded in perception, while the former are products of socioculturally constrained education. I would therefore conceive of the actional notions as being discrete: one either is or is not attributed volition, intention, rationality, or sentience; there is nothing in between. This discreteness could yield binary distinctions in the formal side of language, i.e., syntax.

With respect to the thematic part, comprising the perception of spatiotemporal relations, prototypicality or gradation seem more likely to play a role. Reconsider what has been said about c-causation, conceived as c-affection, in section 3.6: the concept of c-affection allows different degrees of affection, or even radial structures around a prototype, based on

(i)   former experience with perceived events in which force has been exerted by one event participant toward another event participant with different outcomes (± change of state, kinds of change of state, cf., e.g. GRIMM's [2005, 22] concept of "persistence"),

(ii)   the emergence of a prototypical "causation"-event concept, determined by the frequency of occurrence of the perceived events with their different outcomes (with the exact nature of the prototype left open for now).

In sum, in the view defended so far and in accordance with the criticism passed of several notions connected to that of 'agent', the agent concept should not be conceived as being organized according to prototype theory, because it is only in part (even if it is a constitutive part, namely that based on perception) built of features that are prototypically organized. The other part, namely that based on sociocultural education and on the attribution of features that are defined in dependence on that education, is presumably not equally prototypically organized. It is a task for future research in the cognitive sciences to account for the precise relationship that holds between knowledge that is more directly based on perceptual experience and knowledge that is gained via functioning in a society (e.g. the "rules" of "proper" attribution of features to others). It seems, then, that not only the assumption of "real" agents is problematic but that the assumption of "conceptual agents" is problematic, as well.

3.8   A continuum of agentivity?

The considerations regarding the prototypicality or non-prototypicality of the 'agent' notion lead to another question toward which any proposal about agentivity must take a stand. Is there mentally a scale or continuum along which degrees of agentivity range? Such a scale, or continuum, was, as an example, proposed by COMRIE (1981). Although it is not exactly a continuum of agentivity, but rather one of "control" that is put forward here, and the agent is supposed to lie at the upper pole (COMRIE 1981, 52 et sqq.). 'Agent', then, is a notion that ranges at the top of a scale with respect to one parameter, namely control. The decrease of control correlates with the assignment of lower thematic roles, i.e. agent > force > instrument > patient.

Another approach is chosen within RRG (e.g., VAN VALIN 2005), where the agent is found at the top of a hierarchy constituted by several (lexical, semantic, and pragmatic) factors. It is therefore possible, indeed is actually the case that in the distinction between two roles, e.g., agent and effector, one of these factors, which (presumably) does not play a role elsewhere in

the hierarchy, comes into play.[13] I am not sure whether it is more appropriate to speak about a scale or continuum here given the plurality of parameters involved.

In what one could call "strict" cognitivist approaches the relation between agents and patients can be conceived of as a continuum of prototypes (or archetypes). The prototypical agent (as well as the prototypical patient) is present in the prototypical concept of an event. Deviations from the prototypicality of the event lead to a "decrease" in the agentivity of the respective participant (LAKOFF 1987, LANGACKER [2]2002).

In the history of thematic role theories, the predecessors of proto- and macroroles were thematic role hierarchy theories (cf. KASPER 2008; examples of hierarchies include GRIMSHAW 1990, BRESNAN and KANERVA 1989, GOLDBERG 1995). Methodological wariness would counsel that we not conceive them as scales or continua given the multiple parameters involved in the determination of the members in the hierarchies and their positions within them.

For those theories, then, which propose a scale or continuum of agentivity, the same objections hold as for the "pure" prototype proposals discussed in the former section: through their restriction to some definite parameter, they conflate different kinds of information which need to be distinguished – namely perceptual and actional.

4 What is an agent supposed to supposed to be …?

Bearing in mind what has been said about the refraction of the 'agent' notion, what the linguist in effect does is to suppose what an agent is supposed to be by the speakers of a particular language. In outlining some of the perceptual and actional bases for agent identification I will make as few objectivist commitments as possible. In particular, I will try to avoid making assertions about the states of mind of others.

As has been indicated in the foregoing sections, I suggest the 'agent' notion is drawn from two kinds of information, perceptual and actional. The relationship between both is not easy to specify, taking into account the fact that they are both "kinds of knowledge" and that actional "knowledge" is ultimately gained via perception, too. Nevertheless, I will try to adequately distinguish them. Given the primacy of perception, it will be outlined first.

4.1   Perceptual foundations

This section will not be an introduction to the cognitive psychology or cognitive neuroscience of perception. They can be found elsewhere (e.g., BRUCE, GREEN & GEORGESON [4]2003, ANDERSON [5]2000, SOLSO 2005, STERNBERG [4]2006, ENGELKAMP & ZIMMER 2006 and WARD 2006). In addition, I will concentrate mainly on the psychological aspects of perception, not on the neurological.

There is ongoing debate about whether perception should be conceived of as comprising bottom-up (e.g. GIBSON's "direct perception" proposal) or top-down processes (mostly based on von Helmholtz). I think such a discussion is misguided. The question is not whether or not higher cognitive processes are involved in the processing of perceptual data, but rather when in the course of processing these processes "come into play". The integration of both approaches is largely agreed upon in contemporary cognitive psychology (cf. ANDERSON [5]2000, EYSENCK and KEANE [5]2005, SOLSO 2005, ENGELKAMP and ZIMMER 2006, STERNBERG [4]2006). I suggest that the contents of a person's 'agent' concept comprise information not

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[13] In this case it is the pragmatic implicature, according to which a human causer is interpreted as volitional causer, i.e. as Controller (PRIMUS 1999) or the argument of DO' in a decomposed structure (VAN VALIN 2005), respectively.

exclusively provided by bottom-up processes. In other words, whether or not a sensed object is apt to be attributed the agent role in an event is not part of the information provided by the particular stimulus. Rather, the agent-aptness of a sensed object is not an issue until the move from sensation to perception takes place. What does that mean?

One must first distinguish between sensation and identification. I take sensation – maybe contrary to its general usage – primarily to be the process from reception of energy from the external world by a human sense organ up to the completed construction of a structural (i.e., formal, in the sense of "concerning its features"; not to be confused with "based on symbol manipulation") description of the sensed object based on the retinal image of the perceiver. As opposed to that, perception (in the narrow sense) comprises all the processes involved in identifying the sensed object on basis of its structural description as a particular object (belonging to a particular category). The process of identification can only take place by accessing higher cognitive capacities, namely by matching the structural description with what has formerly been memorized. (Naturally, the process of identification of something as something is fallible, i.e., it does not work by matching the structural description of the sense datum with memorized information alone. Other factors which should not be underestimated are what the perceiver expects to perceive, where her focus of attention lies, what her interests and purposes are and the like; cf. e.g., MOSKOWITZ 2005, ch. 1.) Consider Figure 1.
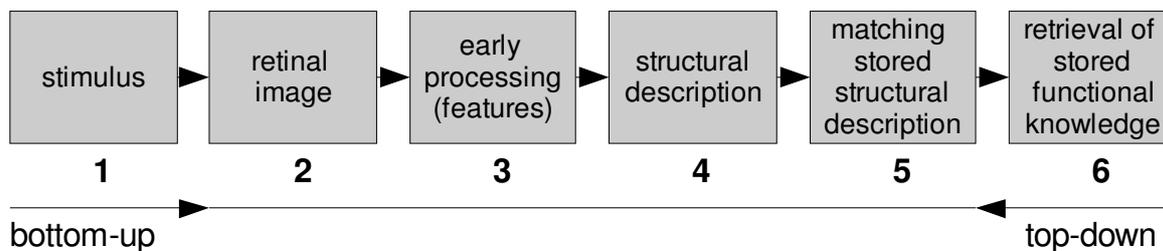
Figure 1: Simplified schema of steps involved in object perception (adopted from ENGELKAMP & ZIMMER 2006, 109; modified)

In the course of object perception, then, top-down processes do not have access to all of the steps shown in figure 1. As indicated by my distinction between sensation and identification, higher cognitive processes do not have access to or influence steps 4 to 1 but at most step 5.

An important aspect of perception (in its broad sense, encompassing sensation and perception in the narrow sense) is that one can make predictions about the relationships in which a sensed object may stand (and how it is to be acted upon) on the basis of its structural description alone. This means, the percept of an object affords activities on the basis of its sensed shape (see WARD 2006, 168 et sqq. on affordances). This is not to be confused with the involvement of higher cognitive processes, since objects still afford action possibilities when semantic memory is impaired (semantic dementia, ideo-motor apraxia) and step 6 above is made impossible by this impairment (HODGES ET AL. 1999, 2000, GOLDENBERG & HAGMANN 1998). That means that the affordances provided by sensed objects supply information about their (potential) physical behaviour even before the object is recognized as an instance of some memorized concept (step 6). Now it is plausible to assume that there are relations in which objects may stand and actions which may be performed toward these objects that are far more appropriate, or frequent, or natural, or familiar than others. As an example, this would be the case with a glass, "originally" designed for drinking out of, which is actually used for rolling dough, as if it was a rolling pin, or which is used as a vase. The latter are "alienated" uses only with respect to the knowledge of the purpose of the glass. However, the original use of it has epistemologically no privileged status relative to all possible uses. The "original" or appropriate use of the glass does not follow at all from its

(sensed) physical properties, i.e., its structural description, but is a result of learning processes, i.e., the frequent observation in the context of a sociocultural praxis according to which the object in question is actually used as something to drink out of. The frequent observation or execution of a particular action with an object leads to a neural potentiation of this action (ELLIS & TUCKER 2000) which, in turn, leads to something like a prototypical concept of an action that is made with or toward it. The frequency of occurrence of an action schema feeds back to the degree of affording particular actions, i.e., the affordances of frequent actions are more easily elicited due to neuronal plasticity. It follows from these considerations that object identification (to perceive something as "something" by matching structural description with memorized knowledge) depends crucially on learned actional knowledge, i.e., knowledge of action schemas in which object concepts are involved.

The second important aspect is that visual perception (broad sense) and imagination (making use of mental imagery) draw from the same neural substrate (KOSSLYN, GANIS & THOMPSON 2001, GANIS, THOMPSON & KOSSLYN 2004), i.e., thanks to the involvement of mirror neurons, perceiving an action and performing that action are largely equivalent (GALLESE & LAKOFF 2005) with respect to neuronal activity. In light of this, the role of perception in the use of language can be more properly characterized. In that language is not used as a mere reflexive response to visual stimuli but can in principle appear out of nowhere, i.e., without any perceivable elicitor, it must nevertheless draw upon our conceptual system. The conceptualization of the argument structure of an utterance, then, is either based on a perceived (broad sense) event or is imagined independently of what is actually going on around the speaker.

In either case, the object "information" a speaker makes use of in producing an utterance is rooted in a) the sensed stimuli (bottom-up processes), b) the knowledge gained from sociocultural praxis (top-down-processes), c) the actual focus of attention, interest, purpose etc. (presumably mostly affecting top-down processes).

4.2   Actional foundations

In linguistic structures information is coded that cannot be inferred solely from knowledge gained through what I have termed sensation. The outcome of sensation is radically underspecified with respect to the exact relationship holding between the elements in the visual field. In order to account for the kind of knowledge involved in top-down processing (identification) a theory of how this knowledge is gained is needed. I suggest that only an action theory can suffice.

First, consider the following two examples which demonstrate the inadequacy of any attempt to derive linguistic structures solely from sensation.

(3)   *Jesus died to save us from our sins*.

(4a)   *Mir   ist   die   Vase   zerbrochen.*
to-me.DAT   is.3SG   the.NOM   vase.NOM   break.PTCP.PRF.PASS
'It happened to me that the vase broke.'

(4b)   *Ich   habe   die   Vase   zerbrochen.*
I.1SG.NOM   have.1SG   the.ACC   vase.ACC   break.PTCP.PRF.PASS
'I broke the vase.'

Sentence (3) is taken from van VALIN/WILKINS (1996, 312). It is a translation of a Tsova-Tush sentence which is considered to be an example for the agentive use of an originally unaccusative verb (see also HOLISKY 1987). The verb seemingly ceases to be an unaccusative verb and receives an agentive reading in the moment it is complemented by a purpose phrase. What is the criterion that allows *die* to receive an agentive reading in this example? Or to put it differently, in accordance with my suggestions regarding the relation between predicates and arguments (section 3.5), what is it that allows Jesus to be the agent of the event of dying while this is seemingly not possible for the cat that lies run over in the street? However, I argue that it is possible to construe lifeworld situations which allow for the cat to be conceptualized as an agent argument of *die*. Imagine the following context. You and your partner have moved in together. Your partner has brought along her cat. You hate this cat! You don't want it in your flat; you don't even want to see it. One day, you come home; your partner isn't there, only the cat. It lies there on your beloved carpet, giving a death-rattle. You, in your best German, shout

(5) [*Nichts da*! *Stop*,] *hier   wird   nicht   gestorben*!
                          here   is.3SG.PRES not   die.PTCP.PRF.PASS
     '[No way! Stop it,] you will not (= must not) die here!'

I would argue that the primary interest of the speaker here is to keep his carpet clean. To gain this purpose he is likely – in part based on his negative attitude towards the cat – to attribute agentivity to the cat with respect to its "activity" of dying. The passive form of the sentence implies that the cat could have done otherwise. Such an attribution, or more generally, most attributions concerning action-theoretic notions and causal relations, are information not present in the percept.[14] It is in this sense, illustrated in the examples above, that visual experience is underspecified.

Before considering sentences (4a) and (4b), imagine another situation in which your partner is vacuuming the carpet in your living room when she suddenly bumps your beloved vase resting on the television with her elbow. The vase falls and is broken. Later she tells you either (4a) or (4b). The point is that your partner, i.e. the *Ich/Mir* in these sentences, is in fact a unique stimulus with respect to both possible sentences, although there is a substantial difference in meaning between the two sentences. The verbs in the two sentences are identical, *zerbrechen* 'break'. That is, the meaning difference "resides" in the first argument of *zerbrechen* which is *Mir* 'to me' or *Ich* 'I', respectively, and the choice of auxiliaries. Again, both *Mir* and *Ich* refer to your partner's concept of himself with the difference that she overtakes responsibility for breaking the vase in (4b) while she does not in (4a). In other words, you cannot easily blame your partner after she has uttered (4a) while you can after she has uttered (4b). It is therefore no surprise that, for most speakers of German, (4a) probably sounds far more natural. How do we account for these data?

Examples like those in (4) and (5) illustrate that both objectivist and conceptualist attempts in defining agentivity are based on the "decontextualization" of verbal communication. By decontextualization I mean the exclusion from consideration of the embeddedness of verbal utterances in everyday interaction. This interaction is fundamentally characterized by acts of overtaking and attributing responsibility. What we need here is therefore a theory of those action-theoretic differentiations which are enacted in everyday praxis. This provides the possibility of embedding verbal utterances in everyday interaction. The outline of the basic distinctions in the following action theory is based mainly on the account of HARTMANN (1993, 1996, 1998) and JANICH (2001), both building on work of VON WRIGHT (1977 [1963]), the ideas of acquisition stem from JANICH (2001).

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[14] Causal relations are not visible. „Causality" is a terminus of reflexion, i.e., a theoretical construct used to talk about invariances in the co-occurrences of events and objects (cf. HUME 1975 [1777])

In living our lives we have learned to distinguish things and events. And in our everyday praxis of life we can easily distinguish between events that are movements and those that are motions, where "movement" shall apply to animate beings and "motion" to inanimate beings. Note that degrees of animacy (in the linguistic sense) may also be learned (or acquired) to a certain degree (see section 2.1 above on animacy). Another distinction we acquire through everyday praxis is that between behavior and action. These are the two types of movement. The distinction between these two is of great importance. Behavior can be described as those movements which can perfectly be described and explained in terms of biology, physiology and other natural sciences, since these are, or claim to be, able to causally explain the occurrence of behavior in terms of natural laws (i.e., laws about patterns of events of the type: Everytime something of kind A happens, B occurs afterwards). These causal explanations in terms of natural laws cannot be applied to acts, since they can be desisted from, i.e., their occurrence can not be captured by such laws. In fact, they do not exist (cf. HARTMANN 1998: 42ff.). Examples of behaviour would be breathing, the heartbeat or yawning. Examples of actions are writing a letter, buttering bread, running, singing, eating.

Any event that is not an act of ours happens to us (result: happening). These happenings include, for instance, our own behavior, the behavior and especially the acts of others. Acts can be successful or they can fail. Due to the success or failure of our own acts we may incur happenings even with respect to our own acts: a failed attempt to jump over a brook "happens to" us. All instances of the successful accomplishment of a particular act, e.g. opening the window, writing a letter, washing the dishes, can be abstracted from, resulting in action schemas. An action schema is actualized when a particular result of an action occurs, i.e., the bringing about of a situation as the result of an act. When I have opened the window successfully, i.e., the window is open after my acting, then I have actualized the action schema of opening the window, since the resulting situation of the window being open is the condition for the foregoing action to be an instance of the schema "opening the window". Most actualizations of action schemas are mostly associated not only with particular resulting situations but also with further outcomes. A further outcome of my opening the window could be an increase of noise. It is, however, not necessarily tied to the action schema "opening the window" and its (necessary) resulting situation, the window being open.

In the course of our lives and our everyday experience we gain encyclopaedic knowledge about the outcomes of our actions. We use this knowledge to fulfil our needs. When I turn on the light, the action schema "turning on the light" is actualized iff the light is on. My need is, however, to get something out of the room in which it is dark, and a further outcome of the actualization of the action schema "turning on light" is that it is bright in the room after I have turned on the light to find what I am looking for. Therefore, we use our knowledge about the further outcomes of our action for the sake of bringing about particular situations. These situations are purposes. Outcomes of acts that are not purposed are side-effects. If a purpose is achieved, the act has been effective; if not, it has been ineffective. Most purposes can be identified with the outcomes of action. But there are also cases in which a purpose coincides with the (necessary) resulting situation of an action, e.g., if someone writes poems to write poems. These acts are acts with an end in themselves. These considerations are captured in Figure 2 below:
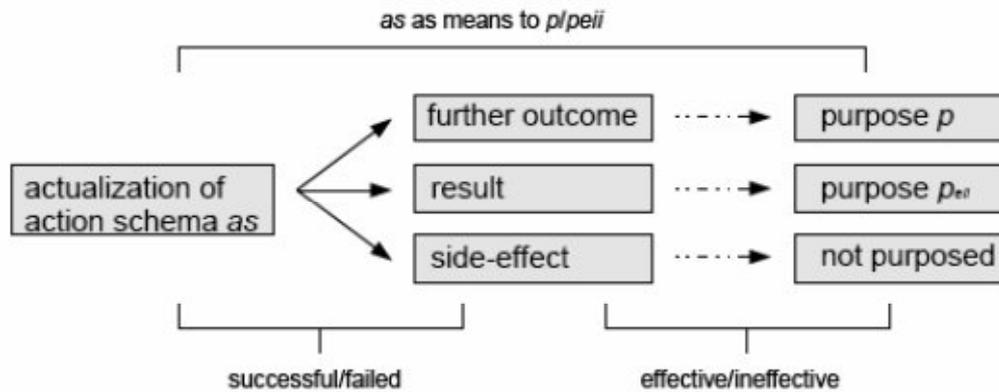
Figure 2: The relation between action schemas and purposes

The Figure illustrates that a successful actualization of an action schema leads to necessary results, contingent further outcomes and contingent side-effects. When the further outcome of the actualization of an action schema leads to the desired result (purpose p), it has been effective. Action schemas are means to put purposes into effect.

Many action schemas as are actualized by actualizing other action schemas, as_1, as_2, as_n first (think of making coffee, for example). Then, the *as* is mediated by as_1, …, as_n. The latter are known as ancillary action schemas. Acts that do not support others are basic acts. The defining criterion for a basic act is how it is learned: it cannot be learned by the step-by-step acquisition of partial action schemas but only as a whole (e.g. washing one's hands consists of different steps learned independently of one another, while clenching one's fist is a unified whole, in that one need not learn to bend each limb separately).

Those action schemas that are usually effective with respect to a particular purpose *p* when they are achieved are means to *p*. In order to put into effect a particular purpose it might be necessary to put into effect other purposes first. I would call the former the superior purpose *p* and the latter subordinate purposes p_1, …, p_n, where subordinate purpose p_1 might be subordinate to a "higher" purpose *p* but at the same time be the superior purpose in relation to a yet "lower" purpose, p_2. When several actions must be executed in a strict order to put into effect a highest purpose *p*, this is called an action chain.

Action schemas that are regularly actualized by a person in a particular situation are referred to as the modes of action of this person. As an example, a mode might comprise all of the action schemas actualized by a person between getting up in the morning and arriving at work on a regular weekday. When a purpose is put into effect by concerted (successive or simultaneous) action of several persons, this is referred to as an interdependence of acts. They can be schematized and actualized as complex modes of action, even person-invariant. Schematized and person-invariant interdependences of action are (sociocultural) praxes.

Our lives are nearly unimaginable without actions involving things (glasses, hammers, books, plates, keys etc.). Most of these things are artefacts, i.e., they have been brought into existence through action. Acts that bring things into existence are poietic acts.

All this, action schemas, modes of action, schematized interdependence of action, artefacts etc. comprises a culture, as these things are passed on from generation to generation within a community. Inasmuch as we have always been together with others in our culture, we can easily understand the actions of others in the light of this culture. We know which purposes and which action schemas are appropriate in the context of particular situations and interdependences of action.

One word on "intentions": they do have a place in this theory, although I rejected the notion in the form in which it is presented in current theories of agentivity. Imagine a situation in which you observe your partner holding a hammer in her right hand and a nail between her

left thumb and forefinger. She holds the nail against the wall and delivers a powerful hit to her thumb. According to HARTMANN (1996, 83; my translation), because we know

> "that in such situations something usually should be hung (on a wall), we also know, without needing to ask the person about her intentions, which action was originally intended as an appropriate means for doing this (namely hammering the nail into the wall). Attempts are often made to explain the distinction between action and behaviour with the remark that, in contrast to behaviour, actions are deliberate or intended *Regungen*. This is in fact true, but unfortunately, methodically, the term 'deliberateness' cannot be defined before the term 'action' has been explained. Whilst the distinction between action and behaviour can be established by means of examples without recourse to the term 'deliberateness', talk of 'deliberateness' does not become relevant until it is related to a failed act."

How do we gain the ability to understand others' acts, i.e., to decide whether what we have just observed is action or behaviour? (Think of "bodily emission" events, e.g. farting, belching, stinking, and how they are usually judged for an illustration of the difficulty of this task.) According to JANICH (2001, ch. 1), for most action theories, the starting point for reflections on the capability of acting is the individual being. I would agree with JANICH in saying that any attempt to understand human action that does not start out from the community is doomed to fail. In other words, the capability of acting of an individual can be understood only if one explained it in terms of the genuine commonality of the everyday praxis of life (see also MEAD 1934: 6f.). It is then the case that before we (in ontogeny) "know" what is action and what is behaviour, we are attributed with credit, accomplishment or fault by those nearest us for what we (neutrally spoken) "do". It seems that we experience attributions of credit and fault before we subjectively discover our own intentionality (in the sense of HARTMANN). We must learn what is attributed to us as action and what is not in order to become part of a cultural praxis, and within a community there is no way to not learn it. What I have called the genuine commonality of the everyday praxis of life is consequently the precondition for understanding action in general. To understand the act of another person is to learn and to know which action schema she is actualizing and to know for which purpose this act/these acts is/are (a) means. "Understanding an act thus means attributing to a person an act which 'as an act' includes the relation of an action schema to a purpose." (JANICH 2001, 60; my translation). We can call this an "ascriptivistic" notion of action. Furthermore, in order to identify someone's movement as an act toward a purpose, we must possess something like an ability of role-taking, i.e., the ability to prospectively simulate performing what the other is actually performing to understand his purposes.[15] In this sense, the ability of role-taking includes knowledge about "typifications of interaction patterns which are socially approved ways of solving typical problems […]." (SCHÜTZ 1956: 75).

Our cultural praxis presupposes the intentionality (the competence of action in the sense outlined) of all its participants and this is presumably reflected in the structure of our languages. I presume that the fundamental character of attribution found in our acquisition and actualization of actional knowledge can also be found in concepts that are relevant for linguistic structures. Linguistic structures do not code – this is my thesis – what we subjectively "think" distinguishes action and behaviour or what we subjectively discover as our intentionality, but linguistic structures code these notions as they are manifested in an intersubjectively accessible sociocultural praxis which is characterized by mutual ascription of responsibility. In other words, sociocultural praxes of attribution are grammaticalized (see section 4.5).

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[15] This simulation might take the form of a mental, or cognitive, simulation, involving activations of regions in the premotor cortex which are also activated when some action schema is „really" actualized (cf. RIZZOLATTI 2005).

One consequence of the action theory presented here is that the attribution of action (i.e. the attribution of deliberateness in doing something, of credit and fault, accomplishment and "misaccomplishment") can be extended to non-human beings as well, maybe as a kind of overgeneralization of the implications of human cultural praxes. This overgeneralization may be triggered, e.g., by present purposes, interests or foci of attention. Interest can be defined as the purpose that consists in sustaining or preventing a situation (HARTMANN 1996, 78). In uttering sentence (5) above (*Hier wird nicht gestorben!*) I am actually attributing action to a cat, based on my present interest to save myself the trouble of removing the cat I hate from the carpet I love. With that I overgeneralize the mechanisms dealing with action in my culture in alleging that the cat could have done otherwise, namely desist from dying, which, importantly, constitutes an action, as well. Humanization of non-human beings is most natural for us, most obviously in the context of our domestic animals to which we readily ascribe the capability for means-end rationality (*My dog Hasso <u>brings</u> me the newspaper every morning <u>because</u> he <u>knows</u> he gets something to feed then.*).

4.3   Consequences for the 'agent' notion

Bearing in mind the actional foundations just outlined, consider (6):

(6) 'Agent' is a concept attributed to perceptually based object concepts (in the broad sense) which are attributed purposes for which the actualized action schemas in question are considered to be means to put into effect.

This is only a summary of what has been mentioned throughout this presentation of an action theory. An agent is someone to whom action is attributed, where the presence of action depends on all the conditions mentioned.
Remembering the perceptual foundations (section 4.1), we can implement (c-)causation (see sections 2.5 and 3.6):

(7) 'c-*conditio sine qua non*' is a concept based on conceptualizing an object and the event or state in which it is involved. It is based on bottom-up sensation and mental imagery.

(8) 'c-affection' is prototypically organized concept, with radial structure, based on potentiated perception of (physical) force exerted by one object to another object (transitivity). It belongs to the perceptual (broad sense) side, i.e., it comprises "knowledge" that is gained from bottom-up sensation and mental imagery.

The linguistic agent traditionally proposed mostly comprises what I have called "agent" in (6) (e.g. van VALIN/WILKINS 1996 in the sense that the agent is "more" than a causer) and "c-affection" in (8) (all proposals having one or another concept of causation as a necessary condition). I will illustrate the application of these notions with some linguistic examples. There is the classical problem of distinguishing killers and murderers. Both killing and murdering describe an action in which some object is conceived of as causing another object to change its state from alive to dead. While a person, say Peter, can murder as well as kill someone, a falling tree can kill but not murder them. According to most proposals reviewed above, this is due to Peter's being sentient, volitive, intentional, rational or whatever else is attributed only to humans. As a consequence, Peter is (interpreted as) an agent and the tree is (interpreted as) a causer/effector. In terms of (6) and (8) above, both participants are c-affectors but only Peter is an agent. It is, however, possible that the question of whether Peter

has killed or murdered someone cannot be inferred from the stimulus sitatuation alone, i.e., there is only one event (one perceptual experience) and it can be interpreted either as a killing or as a murder (because it is underspecified with respect to the differentiations provided by the action theory). In most theories of agentivity, a decision regarding this question is made on grounds of objectively deciding whether Peter is in fact actually sentient, volitive, intentional, rational etc. while executing the action. As I have tried to point out in the context of the action theory, this approach is mistaken. It is completely irrelevant, whether Peter is or is not in these psychic states, it is the attribution which is the critical feature here. This is captured by (6). The attribution of agentivity is thus superimposed on perceptually grounded considerations.

What then looks like a continuum of agentivity or like better or worse examples of prototypes, is in fact categorically completely distinct. Assuming that our grasp of what happens in the external world is governed by perceptual and actional knowledge as I suggest, c-affectors are grounded in perception while agents are grounded in action (cultural praxis). Therefore, it seems problematic to speak of prototypes or continua.

Nevertheless, due to the superimposition of agentivity on c-causation, there are potential inclusions. This means, every agent is at the same time the c-*conditio sine qua non*. If the event is transitive, the agent is also a c-affector, but this is not so if it is an intransitive event. In consequence, agentivity is completely independent of transitivity.

In sentence (5) above I have already touched upon intransitives. In the present approach, the split will be governed by the presence of an agent in the sense outlined. Whether or not some intransitive verb can "take" an agentive participant depends mainly on the inherent and actual properties of this participant derived from perception or evoked in conception, and the likelihood that a speaker attributes purposes to this participant.

4.4   Socio-cognitive factors in agent attribution

I assume sociocultural praxes to be the main source of the relativity of the assignment of the agent role to participants in situations, since action and agentivity are definable only relative to a specific sociocultural praxis. Speakers belonging to different sociocultural praxes may differ in their attribution performance along several parameters about which social psychology provides some information. Our starting point is the assumption that what we perceive is underspecified with respect to those relations among the objects in our visual fields which are of high relevance with respect to the actional lifeworld differentiations as they are captured in the above action theory. It is along these differentiations that our praxes are organized. Adequate categorization of our perceptual input is the precondition of our purpose-rational engagement within and towards our environments. Perceptual experiences must therefore be brought in line with those differentiations. Why should this be so? Social psychologists call this phenomenon "need for structure/closure" (MOSKOWITZ 2005, 217f.) following the gestalt law of closure (cf. WERTHEIMER 1923). According to MOSKOWITZ (2005, 217), this need "is characterized by quick cessation of the epistemic process [sensation and identification – SK]; it elevates the costs associated with lacking cognitive closure, leading people to seek the quickest route to closure. […] It promotes a state where alternative hypotheses are less likely to be generated, information inconsistent with what is expected is less likely to be attended to, and ambiguity is avoided […]." A state of closure is attained if the perceived relations among the objects in the visual field fit prior assumptions, expectancies, interests, or purposes. Because perceivers are primed by such matters they might not even be aware of such ambiguities. There are, however, cues which to a certain degree allow predictions about which relations are imposed on what is perceived, i.e., what provides closure. Let us assume the event we are talking about is the one underlying (4a) and

(4b) above. There is only one perceivable event underlying both utterances and this event is action-theoretically underspecified and needs "closure". The way it is "closed" by the perceiver is presumably mainly determined (or biased) – in accordance to attribution theory in social psychology (cf. MOSKOWITZ 2005, ch. 6, 7, 8, SMITH and MACKIE [2]2000, ch. 7, 8) – by

a) the question whether the result of the perceived event is considered an *accomplishment* or *misaccomplishment* by the perceiver, such that
- the attribution of responsibility to the causer of the resulting situation might correspond or diverge from the *present purposes/interests* of the perceiver,
- whereby the responsibility for accomplishments is readily overtaken when the perceiver is the causer,
- whereby the responsibility for misaccomplishments is avoided being overtaken when the perceiver is the causer,
- whereby the responsibility for accomplishments might be attributed to *close* others
- whereby the responsibility for misaccomplishments will be readily attributed to others toward whom the perceiver feels *antipathy*.

b) the *kind of relationship* between the perceiver and the causer of the perceived event in terms of *closeness, or empathy and antipathy*, such that
- if the perceiver and the causer are *identical* (high empathy, self-serving effort), accomplishments are attributed to one's own *stable dispositions* and one readily overtakes responsibility for what has been caused,
- if the perceiver and the causer are *identical* (high empathy, self-serving effort), misaccomplishments are attributed to the *situation* and one avoids overtaking responsibility for what has been caused,
- if the causer is another person relative to the perceiver and their relationship is close (high empathy), accomplishments may be attributed to his/her *stable dispositions* and responsibility for what has been caused may be attributed to him/her,
- if the causer is another person relative to the perceiver and their relationship is close (high empathy), misaccomplishments may be attributed to the *situation* and not to the person's stable dispositions, such that he/she cannot be attributed responsibility for what has been caused
- if the causer is the 3rd person relative to the perceiver and their relationship is affected by *antipathy*, accomplishments are likely to be attributed to the *situation* and not to the person's stable dispositions, such that he/she cannot be attributed responsibility for what has been caused,
- if the causer is the 3rd person relative to the perceiver and their relationship is affected by *antipathy*, misaccomplishments are likely to be attributed to the person's *stable dispositions* and not to the situation, such that he/she can be attributed responsibility for what has been caused.

It must be emphasized that the parameter-setting in (a) and (b) are those identified for Western cultures. The parameters in italics (accomplishment/misaccomplishment, accordance to/divergence from present purposes, empathy/antipathy, causer-perceiver identity/non-identity, situation/stable dispositions as the basis for attributions) are considered to be cross-culturally stable, while their setting (which parameter correlates/corresponds with which other) varies cross-culturally, mainly along a Western-Eastern axis (cf. KUNDA 1999, ch. 11; SMITH and MACKIE [2]2000, 114ff., 127f., 311f.; MOSKOWITZ 2005, 37f., 117f., 303f.).

4.5 Linguistic structures and agent attribution

With the factors identified in the previous section one could tentatively attempt to make predictions about the linguistic coding of perceived events. Given the relevant parameters, their interrelations and a critical ambiguous event, it should be possible to predict the syntactic structure of a speaker. This can be illustrated by the examples in (4a) and (4b) again. In (4b), the c-affector is marked with nominative case. The affected entity is marked with accusative case. The verb *zerbrechen* 'break' has a core meaning of physical affection. In combination the elements yield a prototypical transitive sentence. In (4a), the affected entity is marked with nominative. This yields an intransitive sentence in which the c-affector need not be realized. But (4b) is not simply the causative variant of (4a). The presence of the *dativus commodi Mir* which is perfectly natural in these constructions brings it about that both sentences could be seen as a constructional minimal pair in which the role of the c-affector is the distinctive element such that its different realizations (*Ich/Mir*) results in divergent ascriptions of action-theoretic notions to the c-affector(s), while their experiential basis might be a single percept.

It is important to note that the distinction between c-affectors and agents above ((6) and (8), respectively) does not allow a direct mapping between *Ich* in (4b) and one of these roles, respectively. However, if the speaker who is also the c-affector of the event of breaking uses *Ich*, he suggests that he has actualized an action schema as a means to a particular purpose. He thus accepts the risk of being attributed agentivity by the addressee (due to pragmatic implicature) instead of mere c-affection which is neutral with respect to intentionality or the like. In using *Mir* as in (4a), in contrast, the speaker suggests that it was not an action schema she realized but that it was an instance of behavior she could not have desisted from, i.e., it happened to her. This deprives the addressee of the possibility to pragmatically implicate agentivity, although the speaker is nevertheless a c-affector. Using *Mir* instead of *Ich* is then a purpose-rational strategy for safeguarding interests or putting purposes into effect in interpersonal interaction. There is, however, a third syntactic construction, ranging between (4a) and (4b), namely *Ich habe die Vase aus Versehen zerbrochen* ('I broke the vase accidentally'). The adverb makes it impossible for the addressee to implicate agentivity of the speaker/causer. But it is the meaning of the entire construction here (cf. GOLDBERG 1995) that renders the subject of the sentence (the speaker/causer) more "causal" than in (4a). While the *Nom-Verb-Acc* construction is the prototypical transitive pattern (HOPPER/THOMPSON 1980) and is polysemous with respect to interpretations of c-affection and agentivity, it always carries with it a core reading of causation. In contrast, (4a) construes the role of the speaker/causer in the event as almost neutral to the breaking event. Therefore, uttering (4a) would be the most effective means to inform the other about the breaking of the vase without stating that the self is responsible for this. It is more efficient in relation to the intermediate utterance (having broken it accidentally) which, in turn, is more efficient with respect to the purpose than (4b) which renders the self as potential agent. Figure 3 illustrates how the different utterances/syntactic constructions concerning the same event (breaking of a vase) increase the likeliness to be attributed agentivity.
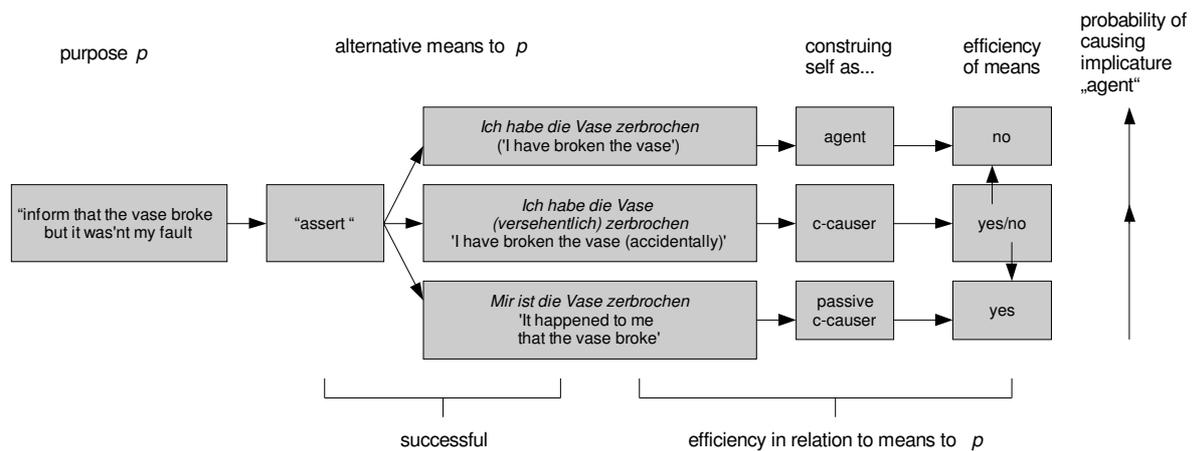
Figure 3: Efficiency of alternative verbal means to a purpose

The above theory of agentivity based on perception and action provides a theoretical foundation for these processes.

The idea is therefore that (4a) would be uttered, for instance, if the event is a misaccomplishment that was not planned, if the relationship to the observer is not so close and if the speaker wants to attribute her causation to the situation and not to some stable dispositions of her (which would make her a gawk). In contrast, (4b) could be uttered in the same circumstances except for the factor that the causer and the one who is talked to have a very close relationship, one that can cope with such misaccomplishments because both partners know that the destruction of the vase does not challenge its closeness and that the event was not a case of action but a happening to the causer. In a second scenario, the event could be considered an accomplishment: the vase shall be destroyed because there is something in it one wants to get out of it. Then (4a) would be inappropriate because it implies that the speaker wants to avoid overtaking responsibility for his causation (which actually deserves credit), since it construes the event as a happening to him, maybe because of disadvantageous situational factors. (4b) would be a natural verbalization of the event because it suggests that the speaker has caused it intentionally (toward certain ends), that it is an accomplishment which deserves credit and that it depends on her personal stable dispositions.

In the context of the project "Syntax hessischer Dialekte (SyHD)" ('Syntax of the Hessian Dialects') sponsored by the German Research Foundation (DFG) the interrogation of about 800 speakers from the whole Hessian territory is planned. The data to be gathered there shall test the hypotheses presented above. In a snap sample with fewer informants I gathered preliminary data, however, because of the small number of participants these early data should not be overestimated. I asked 49 informants which of the following utterances would be appropriate in the following situation:

(9) You borrowed several glasses from a friend for a family celebration. One of the glasses *gets broken* by your *father* Willi who is *weak with the flu*. When you return the glasses to your friend, you say:

(a)   Der Willi hat eins von deinen Gläsern runtergeworfen.

       'Willi knocked over one of your glasses.'

(b)   Dem Willi ist eins von deinen Gläsern runtergefallen.

       '(It happened to Willi that) one of your glasses broke.'

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In the description of the context I have tried to leave the causal relations of the event underspecified as far as possible. They must be imposed on the situation by the informants. The clues they must rely on in doing this are integrated into the text in terms of the parameters identified in the previous section. In addition to the variants (a) and (b) the informants have the opportunity to indicate alternative variants, (c), if they dislike (a) or (b). Finally, they have to decide which of variants (a), (b), or (c) is the most natural one in the situation described to them. The parameters (in italics here, but not in the questionnaire) are set as follows: Willi is the father of the speaker which points to a close relationship. Willi is old and sick, the latter making his causation excusable and freeing him in this situation from negative, stable character dispositions. He caused a glass to fall down which in the context above constitutes a misaccomplishment.

The expected result was that most informants would choose the (b) variant. And this was indeed the case: 42 out of 48 informants stated that (b) was the most natural utterance for them in this situation.

In another question I modified the context to yield a preference for the (a) variant. It turned out that I underestimated the impact of the factor "closeness of the relationship".

(10) While your pubescent *grandchild* Nicole is hoovering up the living room, she bumps one of your partner's tankards – a collectible. *It falls down and breaks*. You already have the dim feeling that your granddaughter is only *cleaning grudgingly* today. Later you report to your partner what happened. You say:

(a)   Die Nicole hat deinen Humpen runtergeworfen.

'Nicole has thrown down your tankard.'

(b)   Der Nicole ist dein Humpen runtergefallen.

'It happened to Nicole that your tankard fell down.'

In this question, 25 informants chose variant (a) as the most natural one, 24 chose variant (b). I set the parameters in a way that the informant's answers should tend to (a) but the fact that it was the granddaughter who did the misaccomplishment seems to have hindered many of them to "blame" her. For the questionnaire to be sent to about 800 Hessian dialect speakers the parameter setting must therefore be optimized. In preparation for this I have asked two different groups of students to whom I presented one of the following questions, respectively.

(11) For a party you have borrowed several glasses from a friend. During the party one of glasses *gets broken* by *some law student you don't know and who doesn't seem to be interested in getting to know you*. When you want to give the glasses back to your friend you say:

(a)   Der Juratyp hat eins von deinen Gläsern runtergeworfen.

'The law student has broken one of your glasses.'

(b)   Dem Juratyp ist eins von deinen Gläsern runtergefallen.

'(It happened to the law guy that) one of your glasses has broken.'

(12) A friend has taken you to a party of *a friend of his that you don't know*. During the evening a glass *gets broken* by you. You ask for the host and tell him that you've come with your friend. Then you tell him:

(a)   Ich habe eins von deinen Gläsern runtergeworfen.

       'I have broken one of your glasses.'

(b)   Mir ist eins von deinen Gläsern runtergefallen.

       '(It happened to me that) one of your glasses has broken.'

I have tried to construe these contexts as being symmetrical, except for the perspective taken. In the former context I have tried to evoke certain stereotypes in that I chose a student of law against whom students of language and literature might have some prejudices. The fact that he visits your party without taking notice of you should point to a character disposition. In the second context you take the role of the person from the first context. You also did not take notice of the host of the party you are visiting. In the first question 12 informants chose (a), 5 chose (b). In the second question 3 chose (a) and 22 chose (b).

Although this is a small amount of data, there seems to be a tendency toward behavioral patterns which are compatible with the predictions made on the basis of the above theory of agentivity and with the socio-cognitive factors formulated in accordance with this theory. More comprehensive data from "SyHD" will show whether this tendency can be validated.

The constructional pairs from German discussed above show a striking similarity to a cross-linguistically well-known phenomenon, namely split intransitivity. The similarity does not lie in the syntactic form, since the (a) examples above are not intransitive relations but they differ in the variable marking of the c-affector. Phenomena of split intransitivity are "real" minimal pairs in that it is often a single morpheme which distinguishes two intransitive sentences with respect to the agent or patient marking of its single argument (e.g., VAN VALIN 1990). Now, supposing that there is a universal basis of sensation due to our similar neuroanatomical makeup and further that people are confronted with inherently ambiguous events in all cultures and speech-communities, it would be consistent to assume that members of different sociocultural praxes have developed different means to impose action-theoretic relations (attribution of agentivity and patientivity) on percepts. The domain in which one would expect such variation is that of verbs describing "happenings to us" the occurrence of which could potentially be pretended while having been executed intentionally.

Prime examples of verbs of "potentially pretended happenings" would be *fall*, *stumble*, *slip*, *roll*, *bump into*, among many others. Linguistic differences can be expected cross-linguistically mainly in the way the c-affector is case-marked or otherwise encoded in such split-intransitive relations (namely either as a c-affector/agent in a transitive relation, or as a patient in a transitive relation; cf. VAN VALIN 1990) and with respect to restrictions about who/what can/ought to be attributed the agent role or not (e.g., speech-act participant versus non-speech-act participant; animate vs. inanimate, etc., cf. DELANCEY 1990). Following BICKEL (in press), S shall designate here the typical coding of the single argument of an intransitive relation, A and O the coding of the first and second argument of a transitive relation, respectively.

For instance, in Nepali (Indo-Aryan branch of Indo-European), *fall*, *roll*, and the like are always marked as O (cf. LI 2007). In Tsova Tush (or Batsbi, a Caucasian language), these verbs are usually marked as O, but in contrast to Nepali, they can also be marked as A (cf. HOLISKY 1987). These are only examples of languages which differ then in their coding of the arguments of "potentially pretended happenings". According to the proposal put forward here

such differences are due to different praxes of attribution within the respective communities. While in Nepali it seems to be prohibited to attribute agentivity to someone who falls, rolls, etc., this is apparently allowed in Tsova Tush. Other examples would be that speakers of Japanese (O) and Tsova-Tush (A) differ in their linguistic coding of people crying, while the status of *cry* in Nepali (S) is difficult to assess. In Tsova-Tush, even responsibility for dying can be attributed to someone as in German (see (5) above). In addition, bodily emissions in Nepali are mostly attributed to a c-affector, thus allowing for the interpretation of agentivity, while this might be prohibited or "split" in other languages (e.g., Hindi).

As a consequence, an important feature of the proposed agent concept lies in the possible variability of the attribution of purposes to participants and this is what also presumably makes this proposal typologically relative. I would therefore posit that the "actional" side of the theory potentially differs from culture to culture, i.e., from one sociocultural praxis to another. This may alter the mechanisms of attribution and the likelihood of objects (concepts) being attributed some action-theoretic features. However, the perceptual, bottom-up processes are presumably universal, while the top-down processed may differ.

It seems, for instance, to be a comprehensible step to assume something like a "hierarchy of likelihood of being attributed with X", where X is some feature, e.g. acting purposefully and the hierarchy is relative to cultural praxes. Such a hierarchy would apply to phenomena of the sort DELANCEY (1990) revealed. He reports languages (or language families) in which it is prohibited to assign "volition" (or whatever this stands for) to non-speech-act participants, i.e., third persons. It might also be the case that it is "unusual" to assign it to the other speech-act participant, the "you". I would suggest, that the reverse configuration can also be found, where third persons are most likely to be attributed with X, while the first person is the least likely, depending on the socio-cognitive parameters presented above (sec. 4.4).

Treating agentivity as something that is attributed in accordance with a cultural praxis instead of conceiving it as objectively given allows a solution with respect to GRIMSHAW's problem regarding psychic verbs. She has to classify someone who fears something as a causer in the aspectual dimension to yield the desired syntactic features of the verb *fear*, namely its nominative-accusative pattern and the fact that it (seemingly) allows for passivization. To fear something, in short, is something for which one can but need not be attributed credit and fault in our culture.

Finally, the present proposal could feed into the question of whether the "prototypical" agent is the "self" (PRIMUS [in print], DAHL 2008) or the "other" (HAUF & PRINZ 2005). From the perspective taken here, children have to learn when, how and why they are agents, depending on their interactions with others and the attributions made by others toward them. It is thus an interactive approach to agentivity rather than one relying on a primacy of the self or the other. Children may have tacit knowledge about which actions they are able to control and which they are not able to control. This knowledge may be "annulled" or "overridden", however, by the attributions of others. Later, in adulthood, I would assume that the primacy of the self or the other depends on the negative or positive connotations of the concrete situation in question. Whether I would like to be more agent-like (i.e., the self as agent) or whether I would like you or him/her to be more agent-like (i.e., the other as agent) depends on whether the caused situation in question is considered to be an accomplishment which deserves credit, or a misaccomplishment which is to be blamed, in the action-theoretic sense. When the self has caused a misaccomplishment, it will presumably avoid attributing agentivity to itself, while it will presumably do so when it has caused an accomplishment. According to attribution theory, the self will thus rely on self-serving attributions depending on the parameters of success and failure (ARONSON/WILSON/AKERT [7]2010: 141).

4.6 Beyond agent

In section 3.5 I have indicated that I am committed to the revision of the dependency concept in semantics. In section 4.1 I have indicated what I think should replace this concept. The revised dependency concept is based on what one could call the "object-before-event hypothesis". According to this hypothesis object concepts and event concepts belong to different stages of conceptualization in that it is objects which are included in events. That means, there is no eating possible without an eater and an eaten. No sending without a sender, a receiver and something sent. No raining without water. The conclusion is that events or situations are built around objects; they are conceptually composed "around" them, depending on their potential and actual features (affordances). It is thus objects that pose selectional restrictions on events or situations, and not the other way around. Events and situations are, from this perspective, clusters of information specifying the state or action in which an object is involved or the relationship holding between two or more objects. Event and situation concepts belong to later stages of conceptualization than object concepts.

If we conceive of the relation between predicates and arguments differently to the ontology-laden classical view, which can be found in such prominent theories as DOWTY's (1991) or RRG (VAN VALIN 2005) for example, we have to impoverish verb meanings first. This, in a variant already known as semantic underspecification (PUSTEJOVSKY 1998), shall be looked at here from a different perspective (than the common polysemy phenomena). The argument is simple: verb meanings are cluster concepts consisting of and drawing from different kinds of "information". Included in the meaning of a verb are the participants of the conceptualized event it describes. Thus, the concepts of the participants are logically as well as conceptually "earlier" than the event. The idea, then, is that the verb meaning is stripped down to a core meaning which can be identified with some experientially grounded event or state the concept of which can be specified in terms of perceptual notions alone (and/or via conceptual metaphor). The "rest" of the verb's meaning resides both in the temporal extension of the event and in the properties and features attributed to its participant(s) as well as its/their assumed inherent properties. That means that the greatest part of a verb's meaning is part of the (potential) features of its participant(s). This, in turn, means that in producing a sentence the attribution of agentivity to the participant of a conceptualized event (because of its "being conceptually prior") works independently of the concept of the event. It would be even more appropriate to say that the concept of the event, the kind of event, depends on the features attributed to its participant(s) (see KASPER 2011).

The actional and perceptional foundations of argument structure as well as the consequences of the object-before-event hypothesis will lie at the heart of a theory of "argument" structure the development of which is under way.

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