Metaphor and Metonymy in Comparison and Contrast

Edited by
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The roles of metaphor and metonymy in English *-er* nominals

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Abstract

In this chapter we demonstrate that the English nominalising suffix *-er* is a poly-
semous symbolic unit whose meanings are conceptually related through meta-
phoric and metonymic links. We hold to the well-established view of metaphor as
a cross-domain mapping and view metonymy as a *contingent* (i.e. non-necessary)
relation whereby a source concept facilitates access to a target concept within one
conceptual domain. In positing a central sense of *-er* embedded in a general con-
ceptual action schema, and metaphoric and metonymic extensions, we account for
the range of semantic role possibilities (Agent, Experiencer, Instrument, Location,
etc.) and referent types (people, objects, events, etc.) of *-er* nominals, irrespective
of the syntactic category of the base. We show that metaphoric and metonymic
operations contribute to the high productivity of *-er* nominals by operating on both
the suffix and the base of the formation. Thus our analysis supports the view that
grammar and lexicon form a continuum of symbolic units.

Keywords: agentive suffix, conceptual transitivity, metonymic source, metonymic
target, productivity, polysemy, semantic role, Transitive Scenario, word formation.

1. Remarks on metaphor, metonymy, polysemy, and prior *-er* analyses

As a consequence of the seminal works of Lakoff & Johnson (1980,
1999), Lakoff (1987, 1993), Lakoff & Turner (1989), Gibbs (1994),
and others, there now exists a reasonably clear idea of what consti-
tutes a conceptual metaphor: It can be regarded as involving a map-

ping from a (usually relatively) concrete source domain into a (relatively) more abstract target domain, where the target domain is (at least, partially) structured by the source domain. Things are, however, less straightforward with metonymy. The usual characterisation of metonymy refers to the notion of contiguity between two denotata or concepts. Assuming that 'denotata' are not just "real-world" phenomena *per se* but conceptualisations of the human mind, one can reduce 'contiguity between denotata *or* concepts' to 'contiguity between concepts.' Thus the denotational (spatial) contiguity of, say, *face* and *nose* can be considered as a case of conceptual contiguity in the sense that there is a perceptually grounded idealised cognitive model of human body parts and their normal spatial positions relative to one another.

Nevertheless, the problem remains to delineate the meaning of 'conceptual contiguity': Can or shall *any* conceptual or semantic relation be called a contiguity relation, which would make it exploitable for metonymic purposes? We propose that the term *contiguous relation* should be interpreted as meaning 'contingent relation,' i.e. as a relation between two entities that is not conceptually necessary. For example, the relation between a woman and the property of playing the piano is contingent in this sense. This relation can be exploited via the metonymy MUSICAL INSTRUMENT FOR PERSON in the utterance *The piano wants a glass of Chardonnay*, where the subject noun phrase refers to the person that satisfies the definite description (in this case the musician playing the piano). In contrast, the hyponymic relation between *tulip* and *flower* is not contingent (and therefore not contiguous), since a tulip is a flower by definition. In an utterance such as *I have to water the tulips* the concept TULIP automatically evokes the concept FLOWER and, in fact, the latter is not deniable without contradiction. This kind of conceptual necessity does not exist in uncontroversial cases of metonymy, like the one above: The concept PIANO can be focused on without necessarily evoking the concept PIANO PLAYER.[1]

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1. Our characterisation of metonymy comes close to that proposed by Seto (1999: 91), who considers metonymy to be "a referential transfer phenomenon based

Metonymy, just like metaphor, can be regarded as a mapping process from a source (sometimes called 'vehicle') to a target (cf. Ruiz de Mendoza & Díez*). Different from metaphor, which involves a mapping between distinct domains, metonymic mappings are supposed to take place within one and the same cognitive domain. This definitional criterion immediately raises the problem of delimiting distinct domains and of identifying single domains. The difficulties are well-known (see Croft*, Barcelona*, Riemer*, Ruiz de Mendoza & Díez*, Warren* for detailed discussion) and will be addressed below in connection with the agentive and the instrumental meanings of *-er* nominals (section 3.4) and with regard to the question of how the event readings of *-er* nominals are conceptually related to their more basic object readings (section 4.6).

We would like to emphasise at this point that we regard both metaphor and metonymy as *conceptual* phenomena and that we disagree with Warren's (*118) view that referential metonymy reduces to head-modifier constructions. Warren assumes that referential metonymies "violate truth conditions" whereas propositional metonymies do not. However, we maintain that, from a cognitive-pragmatic perspective, the primary function of both referential and propositional metonymy is to facilitate the identification of the metonymic target, be it a referential or a propositional target. Questions of truth are secondary in this identification process.[2] One of Warren's examples for a head-modifier construction that is supposed to underlie *a hand* in *Give me a hand*, namely 'that which the hand produces

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on the spatio-temporal contiguity *as conceived by* [emphasis added] the speaker between an entity and another in the (real) world." However, we do not regard metonymy as a purely referential relationship; it is also pervasive on the predicational and illocutionary levels (see Thornburg & Panther 1997, Panther & Thornburg 1998, 1999a, 1999b, 2000).

2. It is well known (cf. Donnellan 1978) that definite descriptions may successfully pick out the intended referent even if the description is literally false; e.g., *the woman over there drinking beer* may very well successfully identify the intended referent even if the woman in question is drinking apple juice, not beer. Similarly, when we use the phrase *hop on the bus* when intending to convey that we are taking the bus to some destination, we often do not literally "hop" on the bus – especially at a more advanced age.

[= help]' is not an adequate paraphrase of this idiom; the hand manipulates and produces things, not help; a more adequate gloss would be 'the activity that involves the hand as an essential component.' Such head-modifier paraphrases, we contend, are merely syntactic reflections of conceptual metonymic operations rather than being their underlying syntactic sources.

Another important question concerns the cognitive status of source and target of a metonymic mapping. As has been pointed out by Radden & Kövecses (1999: 19) and Warren*, in a metonymically interpreted utterance like *I like Mozart*, we refer not just to music but to music composed by Mozart; thus, both the source (*Mozart*) and the target (*Mozart's music*) are mentally present, although the latter becomes the *focus of attention* as a result of the metonymic process. In metonymies that are created ad hoc in specific communicative situations, the source is backgrounded but easily retrievable in the given context (e.g. *the ulcer in room 201* for the 'patient with an ulcer in room 201'). Even when the target concept is conventionalised in the lexicon as one reading of a polysemous lexical item, the source concept is still usually retrievable (e.g. *potbelly* for 'a person with a potbelly'). The link between the metonymic target and its source may however be severed in the course of history: For example, the English verb *implore* originally meant 'entreat with tears in one's eyes;' cp. French *pleurer* 'to weep'; nowadays, tears do not necessarily accompany the speech event of imploring, i.e., the source concept has become detached from the target concept, a development whose result Riemer* refers to as 'post-metonymy.'

To summarise, for the purposes of this chapter we regard metaphor as cross-domain mapping in complete accordance with Lakoff and Johnson's approach. As regards metonymy, we assume that it has at least the following properties:

(1)   Metonymy is an intra-domain mapping.
(2)   Metonymy is based on a contingent (i.e. conceptually non-necessary) relationship between conceptual entities.
(3)   From 2 it follows that the link between a metonymic source and its metonymic target is in principle cancelable.

(4)   Metonymy highlights the target concept, but the source concept is in general still recoverable.

(5)   However, the source concept may become completely detached from the target, a development that results in a post-metonymy.

The above characterisation of metonymy is certainly not exhaustive, but it appears to be compatible with the uncontroversial cases of metonymy such as CONTAINER FOR CONTENTS, PLACE FOR INSTITUTION, PLACE FOR EVENT, RESULT FOR ACTION, PRODUCER FOR PRODUCT, and the like, and to exclude cases that are intuitively felt to be nonmetonymic (like the *tulip-flower* example above that exhibits a hyponymic relationship). Furthermore, this view of metonymy has the advantage of narrowing down the extension of the concept: If any conceptual relation were regarded as a potential basis for a metonymic process, the concept of metonymy would become vacuous.

It is well-known that metaphor and metonymy play an important role in the lexicon to create new meanings, i.e. polysemy (see Bartsch*). This phenomenon has been extensively studied for content words, but relatively little work has been done on the metonymic and metaphoric meaning extensions of "grammatical" elements such as derivational morphemes; notable exceptions are e.g. Jurafsky (1996) on diminutives, Ryder (1991a, 1991b, 1999) on *-er* formations, Górska (1994) on *-less* and *-free* suffixation, and Twardzisz (1997) and Dirven (1999) on conversion (zero derivation). One important goal of this chapter is to show that metaphoric and metonymic processes operate not only on the lexical bases of *-er* formations but also on the *-er* suffix itself. There are reasons to believe that bound morphemes do not behave differently from "ordinary" lexical items with regard to their potential to metaphorically and metonymically extend their meanings (see section 6).

The analysis of *-er* nominals that we put forth in Panther & Thornburg (2001) deviates from previous analyses in at least two respects: First, we argue against syntactically-based accounts like those of Bauer (1983: 285ff), Levin & Rappaport (1988), Rappaport & Levin (1992), and Beard (1995: 316), who claim that the occurrence of *-er* formations with verbal bases can be predicted by a single

syntactic principle: These authors claim that the denotatum of an -*er* nominal corresponds to the referent of the subject (the external argument in Levin and Rappaport's account) of the equivalent syntactic sentential paraphrase of the formation. This "generalisation" is, however, weakened by a considerable number of exceptions. For example, *laugher* has two readings: one that falls under the generalisation ('someone laughs') and a second interpretation ('some event makes someone laugh') that falsifies the generalisation, since the paraphrase 'some event laughs' for the second reading is impossible. Heyvaert (2001) also adheres to the subject nominalisation view of -*er* formations and claims that there is a systematic relationship between nonagentive -*er* words and middle constructions. The problem with this account is that there is only a partial correlation between nonagentive -*er* words and middle constructions. Several of Heyvaert's own examples cannot be used in middle constructions at all; e.g. *jotter, kneeler, stepper* have no corresponding syntactic paraphrases of the form *This N jots/kneels/steps well*. It seems therefore not to be a wise step to "derive" -*er* nominals from, or correlate them with, some underlying syntactic paraphrase.

Second, previous analyses have usually strictly separated verb-based -*er* formations from formations with nonverbal bases on the grounds that the latter are completely different in not being amenable to a syntactically based treatment or an account in terms of argument structure. This separation is even maintained by cognitive linguists like Mary Ellen Ryder (1999). Ryder argues that verb bases evoke fairly specific event schemas with a certain number of participants having specific roles that facilitate the task of finding the intended referent of an -*er* word. In contrast, she believes that noun bases evoke indefinite schemas that have to be supplemented by world knowledge and the context in order to be interpretable.

In our view the putative contrast between noun-based and verb-based formations is not as significant as Ryder and others assume. We have found that all -*er* nominals can be accounted for with the analytical tools available in cognitive linguistics, namely: (i) a general conceptual schema independent of the syntactic category of the -*er* base, (ii) two high-level conceptual metaphors, personification

and reification, and various metonymic processes that account for the polysemy of the *-er* suffix, and (iii) conceptual metaphors and metonymies operating on the base of *-er* formations. Our findings thus considerably weaken the traditional assumption that the nonverb-based *-er* nominals constitute an erratic if not "chaotic" category.

2. A cognitive approach to *-er* nominals

Although *-er* formations in present-day English constitute a seemingly heterogeneous collection of lexical items due to their extreme formal and referential diversity, a coherent picture can be constructed based on conceptual and functional principles. Following Langacker's insight (1991: 16) that "grammatical morphemes, categories, and constructions all take the form of symbolic units," we propose that the present-day *-er* suffix is a polysemous symbolic unit whose meanings are conceptually related through metaphoric and metonymic links.

We posit the central sense of *-er* to be the following: 'a human Agent who performs an action or engages in an activity to the degree that doing so defines a primary occupation.' This use of the *-er* suffix to designate humans by profession produces nominals with both referential and predicational functions. All other *-er* nominals – with their various senses and uses – can be most parsimoniously related to the central sense.

Given the central sense of *-er*, we assume that the semantic description of *-er* nominals must make reference to an idealised model of human actions and activities, which we call the Prototypical Transitive Scenario. The transitive scenario we posit contains the following components:[3]

(1)   There is a setting, i.e. a *place* and a *time*, in which an event takes place.

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3. This model of conceptual transitivity is also central to our analysis of subject incorporations (e.g. *snowfall, nosebleed*) in Thornburg & Panther (2000).

(2)   The event involves two distinct *participants* that are in an *asymmetrical* interaction.

(3)   One participant is an *intentionally acting human*. The other is directly *affected/effected* by the action.

The parameters of this multidimensional model are scalar, i.e. the scenario may be reduced and extended in various ways: It can be elaborated to include other participants, e.g. instruments; the participants themselves can vary in degrees of e.g. agenthood, humanness, or affectedness; and the actions and activities involved may vary with degrees of dynamism, contact, telicity, modality, etc. For example, *exterminator* evokes a dynamic action scenario having a potent Agent and highly affected Patients, whereas *surfer* simply profiles an Agent performing a relatively dynamic activity with no impact on a Patient. In contrast, *owner* evokes a relatively nondynamic scenario low in agentivity and affectedness; likewise *dreamer* is low in agentivity and lacks a second participant.[4]

3. *-er* nominals with object referents[5]

3.1.   The central sense of -er: Professional human agent

Representative examples of *-er* formations having the central sense are: *teacher, baker, brewer, governor, manager, steelworker,* all of which fit the Transitive Scenario in that the referent is a highly agentive human being who pursues some professional activity or performs some action with a more or less strong impact on a Patient. Slightly less transitive, but still high on the conceptual transitivity scale, and less 'professional' are formations whose referents avocationally or habitually or characteristically engage in activities, such as *runner, jogger, skater, swimmer,* and *surfer* that do not involve a Patient, but

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4. We regard the spellings *-er, -or, -ar,* which reflect distinct etymological origins, as irrelevant for a synchronic analysis.

5. For a more detailed and fine-grained analysis of *-er* formations the reader is referred to Panther & Thornburg (2001).

are 'activities' in the sense of Vendler (1967). Typically, in these examples, the professional/occupational or habitual, and therefore characteristic, activity or action named by the base is sufficient to evoke other participants identifiable in the scenario, e.g., *teacher* readily evokes students, academic subjects taught, settings for teaching, and materials used in teaching. One might therefore be tempted to say that the base *teach* is a "reference point" (see Langacker 1993) that allows mental access to other components of the teaching scenario. This view would entail that verbal bases in *-er* nominals metonymically trigger rich cognitive models (scenes, frames, scenarios, and the like). We are, however, reluctant to adopt the idea that the verbal base in *-er* nominals is a vehicle for metonymic mappings because doing so leads to an undesirable overgeneral notion of metonymy. We will therefore say that the verbal base evokes the whole scenario (with its concomitant participants) *directly* (i.e. non-metonymically), as illustrated with *teacher* in Figure 1.

teacher
'person professionally involved in teaching'

[action/activity (teaching)]   [professional human agent]
         teach   *-er*

Figure 1. The central sense of *-er* illustrated: *teacher*

There are, however, numerous *-er* nominals with the central sense that have a nonverbal base.[6] In the case of *tinner, hatter, whaler, driftnetter, Wall Streeter, submariner, philosopher,* and the like, a professional or habitual action or activity cannot be directly evoked.

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6. This *-er* formation type existed in Old English: Ryder (1999: 269) cites Kastovky's (1971) examination of three Old English dictionaries that yielded 50 denominal *-ere* formations among a total of about 300, the rest being deverbal.

These nominals are present-day equivalents of Old English nominals like *bôcere* ('somebody who works with/on books, i.e. a scholar, scribe, or writer') in that they denote human Agents with regard to occupational activities – though their respective bases do not name the action the Agent performs. Rather, in many cases what is named in the base is a substance (*tin*), an affected (animate) object (*whale*), a created object (*hat*), an instrument (*driftnet*), a location (*Wall Street, submarine*), an abstract substance (*philosoph[y]*), i.e. a participant or an entity that is crucially involved in the professional activity. A *tinner* or a *whaler* is a person who does something to tin or whales; a *hatter* is a person who creates hats. In fact, we can even include in this class nominals like *philosopher* and *astronomer* whose truncated bases evoke an academic discipline. In a more abstract sense, philosophers and astronomers are human Agents who professionally direct mental action/energy onto an abstract substance (a scientific discipline), which may be regarded as an affected entity insofar as the discipline may be changed or redefined by the efforts of the Agent.
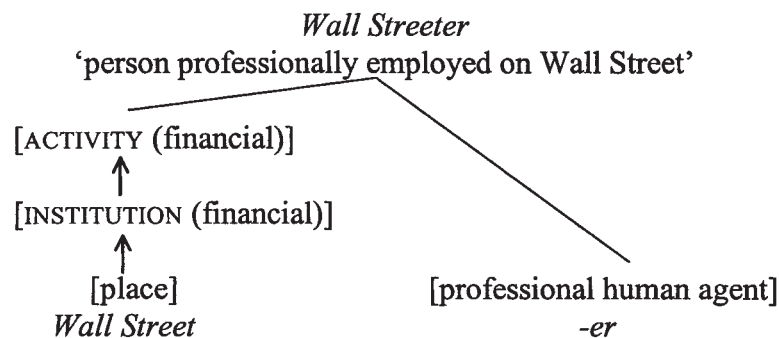
Wall Streeter
'person professionally employed on Wall Street'

[ACTIVITY (financial)]
↑
[INSTITUTION (financial)]
↑
[place]   [professional human agent]
Wall Street   *-er*

Figure 2. Metonymic extension of the base in *Wall Streeter*

We claim, then, that the above nominals with nonverbal bases are conceptually of the same type as the deverbal nominals with the central agentive sense – except that the nonverbal base is metonymically interpreted. Thus, with examples like *driftnetter, hatter*, etc., the denotatum of the base constitutes a reference point from which the oc-

cupational action or activity of the Agent is metonymically accessed. In Figure 2 we provide a schematic representation of *Wall Streeter* (ignoring many conceptual details for the sake of simplicity). The open arrows symbolise an operation from a metonymic source to a metonymic target.

A slightly more complex example in which both metaphor and metonymy interact to lead to the target interpretation 'activity (of Agent)' is the slang term *hoofer*, a term that denotes a professional dancer associated with popular culture (vaudeville, Broadway, etc.) but not usually with high culture (ballet, opera, etc.). We represent this sense creation in Figure 3: The *-er* suffix provides the meaning 'professional human Agent;' the nominal base provides access to the professional activity via metaphorical and metonymic mappings. As before, the open arrow represents a metonymic link. Below and throughout the remainder of the chapter a darker solid arrow symbolises a metaphoric mapping.

hoofer
'professional (vaudeville/chorus) dancer'

[ACTIVITY (dancing)]
↑
[BODY PART (foot)]
↑
[BODY PART (hoof)]   [PROFESSIONAL HUMAN AGENT]

hoof   *-er*
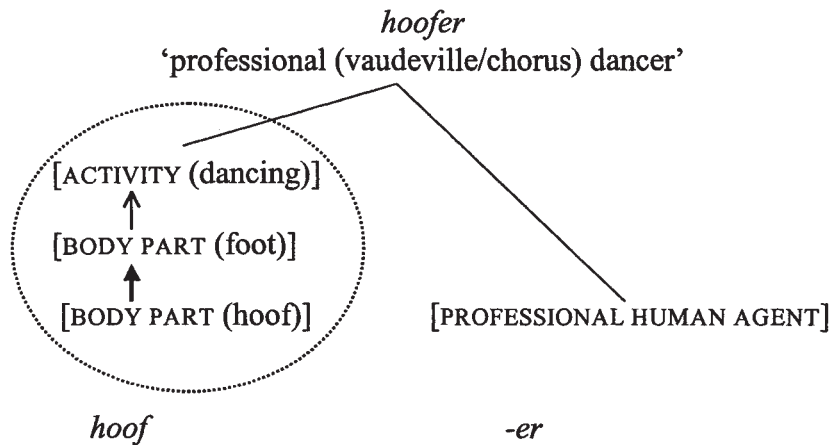
Figure 3. Metaphoric and metonymic structure of *hoofer*

The encircled portion of the diagram in Figure 3 contains a more complex conceptual structure that we elaborate in Figure 4 using a mode of graphic representation developed by Ruiz de Mendoza & Díez (*519ff).
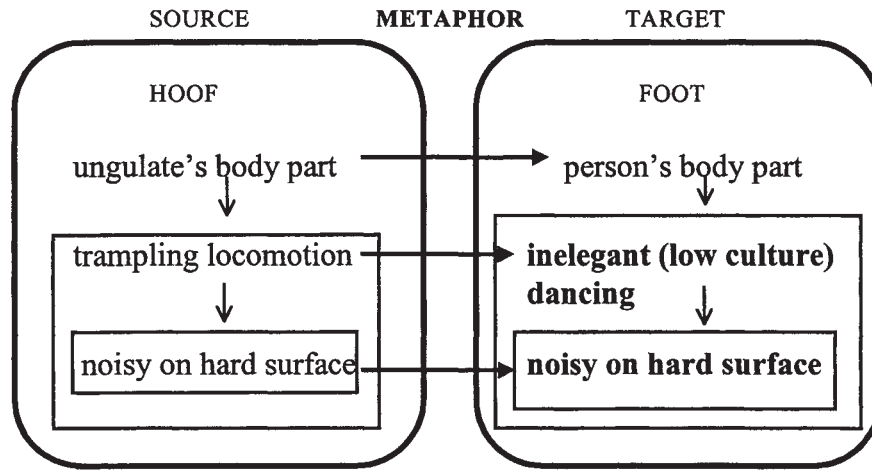
SOURCE   **METAPHOR**   TARGET

HOOF

ungulate's body part ────────────► person's body part

trampling locomotion ──────► **inelegant (low culture)
                              dancing**

noisy on hard surface ──────► **noisy on hard surface**

Figure 4. Elaborated conceptual structure of the base *hoof*

In Figure 4, the two rounded outer boxes represent the metaphorical source domain HOOF and the corresponding metaphorical target domain FOOT. (This correspondence is based on the high-level metaphor PEOPLE ARE ANIMALS.) Within the source domain, there is a metonymic elaboration of the concept HOOF, a body part of an ungulate (e.g. a cow), to the trampling locomotion of this animal.[7] This manner of locomotion in turn metonymically induces the expectation of noise if the trampling takes place on a hard surface. It is these metonymically evoked attributes in the source domain that are metaphorically mapped onto the target domain FOOT, thereby partially structuring this concept. This newly created conceptual material in the target domain is printed in boldface type, whereas the inherent conceptual material is printed in normal type. The ungulate's trampling is metaphorically mapped onto a human being's dancing and the noise produced by the trampling is matched by the noise engendered by the dancing feet on the hard surface of a stage. As a result of the metaphorical mapping the metonymic structure of the target do-

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7. Recall that these metonymic elaborations are contingent, as defined in section 1.

main attains a conceptual structure isomorphic to that of the source domain. Figures 3 and 4 show that there is an intrinsic ordering of the metaphoric and metonymic operations. Figure 3 represents this ordering as a sequence where the metaphor A HOOF IS A FOOT precedes the metonymic operation FOOT FOR ACTIVITY (dancing), whereas Figure 4 represents the source domain (HOOF) of the metaphor as having a metonymically elaborated structure that is isomorphically mapped onto the target domain (FOOT). For more detailed discussions of the relative order and interaction of metaphoric and metonymic processes see Geeraerts (*454ff) and Goossens (*360ff).

To conclude the discussion of the central sense of *-er* nominals, we can make the following generalisation: *-er* nominals with a non-verbal base involve the operation of the high-level metonymy PARTICIPANT FOR ACTION/ACTIVITY, in which the term 'participant' is used to refer to some component in a scenario. That is to say, the metonymic source concept named in the base – i.e. an essential participant (in a professional action/activity) – licenses an inference to, or an evocation of, that same action/activity. In section 4.6. it will be seen that the same type of high-level metonymy found in the base may operate on the *-er* suffix as well.

3.2. Metaphoric extensions from the central sense

Whether animate or inanimate, nonhuman entities perceived to be like humans in some respect can be referred to via the high-level metaphor NONHUMANS ARE HUMANS, also known as personification.

3.2.1. Animals and plants

Animals and plants can be metaphorically construed to be like human Agents to a greater or lesser extent and can therefore be designated by *-er* words in terms of their characteristic actions. In fact, some domesticated creatures are referred to as "working" animals and it is thus not surprising that there are *-er* nominals denoting them by

naming in their base a "professional" action. Nominals denoting animals are e.g. *retriever, pointer, setter, biter, nightcrawler* 'worm,' *grasshopper*. Plants with human-like properties are *Venus fly-catcher, creeper, (late) bloomer*.

3.2.2.   Inanimate objects

Inanimate objects such as automobiles and buildings are also some-times personified as human agents with characteristic traits; two well-known examples are *gas-guzzler* and *skyscraper*. These highly conventionalised *-er* nominals conceptualise objects as if they were humans, habitually guzzling a liquid, or as being so tall that they "scrape against the sky."

3.3.   Metonymic extensions from the central sense

Thus far we have dealt with *-er* nominals denoting professional hu-man Agents (e.g. *teacher, Wall Streeter*), human referents more or less conceptually close to Agents (e.g. *owner, dreamer*) and to non-human referents metaphorised as human Agents (e.g. *retriever, gas-guzzler*). We now turn to those *-er* nominals with nonhuman object referents that have an Agent-contiguous role in the Transitive Sce-nario. These *-er* nominals designate Instruments of various types, Locations, and even Patients, a fact that may appear surprising at first sight. We will argue that these different senses of *-er* nominals are conceptually motivated, but will reserve our discussion of the *nature* of this motivation until section 3.4.

3.3.1.   Instruments

As has been recognised (Ryder 1991a), a natural extension from Agent *-er* nominals are nominals that denote Instruments. Instru-ments seem conceptually related to Agents in an action scenario.

Some Instruments have agent-like properties, others are necessary or helpful in achieving certain goals of an Agent. Examples with verbal bases are *can opener, refrigerator, dishwasher, hairdryer, muffler, fender, bumper, distributor, beeper, pager, vibrator, screwdriver, sprinkler, tranquiliser, thirst quencher, ruler, multiplier,* and *divisor.* There are also nominals with nonverbal bases that have a clearly instrumental character like *three-wheeler, upper/downer* 'drugs,' *three-incher* 'kind of nail.' Just like Agents, these instrumental nominals with a nonverbal base undergo metonymic operations on the base.

As an example of an Instrument that involves both a metonymic and a metaphoric extension of the base, consider a colloquial designation for an antidepressant drug, *upper*, whose conceptual structure is diagrammed in Figure 5.
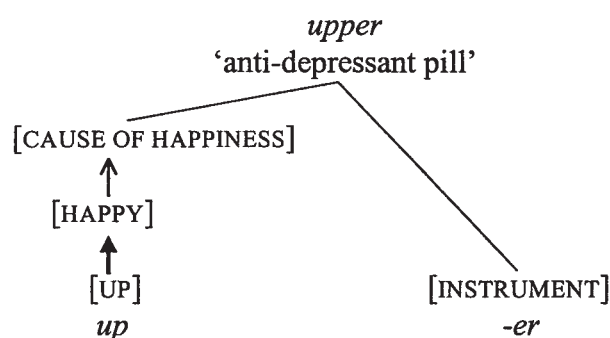

Figure 5. Metaphoric and metonymic structure of the base of *upper*

Upper involves the well-known metaphor HAPPY IS UP. The metaphorical target (HAPPY) is itself expanded by the metonymy EFFECT FOR CAUSE to the cause of the happiness (i.e. the active ingredients of the drug contained in the pill).

3.3.2. Quasi-instruments

There are a number of *-er* nominals that denote articles of clothing worn by an Agent in carrying out a particular action. Examples are

pedalpushers, clodhoppers, clamdiggers, stroller, muffler, loafers, sneakers, and *waders.*

We call these nominals Quasi-instruments because they seem conceptually related to Instruments. Their referents are not themselves sufficiently instrumental in bringing about the action or activity denoted by the base, but like Instruments they assist the Agent in carrying out the action. Thus, *pedalpushers* 'mid-calf length pants fashioned for bicycling' facilitate bicycle pedaling, *waders* facilitate wading in water. Of course these actions can also be accomplished without Quasi-instruments (which, strictly speaking, also holds for Instruments). As with Agents and Instruments, the bases of Quasi-instruments may be nonverbal. For example, the nominal *topside* forms the base for *topsiders* 'rubber-soled shoes designed to be worn for walking on a boat's top side.'

3.3.3.   Purpose-locations

As noted in section 2, the Prototypical Transitive Scenario has a setting with the components Place and Time. Indeed we find *-er* nominals that denote a *place* where an activity is carried out by some (human) Agent, e.g. *sleeper, diner, crapper, shitter, bed-sitter, larder.* What makes these nominals conceptually contiguous to Instruments is the fact that they designate (sometimes large) objects that are designed for special purposes of human Agents. In this sense they are motivated extensions of the Instrument category. We note at this point that the setting component Time does not seem to be available as an *-er* referent. That is, *diner* and *sleeper* resist the respective readings 'time period for dining/sleeping.'

3.3.4.   Purpose-patients and Valued-patients

So far we have seen that, overwhelmingly, *-er* words denote an Agent or an Agent-like participant, or an Instrument participant, and even Locations in the Transitive Scenario. Yet strikingly, *-er* words

in English may also denote affected entities (i.e. a Patient) in an action scenario. Examples are *cracker; fryer, broiler, roaster* 'types of chickens;' *steamers* 'clams;' *eater, baker, cooker* 'types of apples;' *sipper, slurper, gulper* 'types of drinks;' *reader* 'collection of readings,' *poster, mailer, scratcher* 'lottery ticket.'

At first sight it is puzzling to have both Agents and Patients as possible referent types of -er formations, given that affected entities (i.e. Patients) seem conceptually so remote from Agents. However, on closer inspection, it turns out that some -er Patients can be regarded as natural extensions of Instruments in the sense that they are designed for a special purpose (independent of whether the purpose is realised or not): Examples are *reader, poster,* and *scratcher.* Others may not be intentionally designed for a certain purpose but have inherent properties that make them suitable for certain purposes, e.g. *fryer* 'chicken young enough for frying,' *stocking stuffer* 'small gift suitable for Christmas stocking,' *fixer-upper* 'house suitable for being fixed up.' Such Patients, then, are conceptually fairly close to Instruments, which are also purpose-designed entities. Closely related to Purpose-patients are those we call Valued-patients, which fulfill a purpose in a person's value system, e.g. *keeper* and *holder.* *Keeper* may denote an entity that is subjectively construed as worthy of being kept (e.g. a piece of jewelry or even a human being via the HUMANS ARE OBJECTS metaphor, as in *Your boyfriend is a keeper*). *Holder* may denote a stock that could pay off in the future and should therefore be held.

3.3.5. True-patients

The participant in the Transitive Scenario furthest removed conceptually from Agent is what we call a "true" Patient. Examples seem to be relatively rare. Two such cases are *scrambler* 'scrambled egg dish' and *beater* 'beaten up (old) car.' These can be called True-patients because there are no special eggs for scrambling, nor are cars designed for the purpose of being beaten up. One could however argue that *scrambler* is a Purpose-patient in that the referent is inher-

ently suitable for the action named in the base. Under either analysis, *scrambler* along with *beater* can only be conceptualised as being in a resultant state after having undergone the action named in the base. True-patient *-er* formations seem to be the least productive type (though see section 6), which is not surprising given their conceptual distance from the Agent. Still, that they occur at all is motivated because they can be regarded as natural extensions from Purpose-patients.

3.4. Summary and discussion of *-er* nominals with human and non-human referents

In Figure 6 we present a simplified summary of our analysis in terms of a conceptual network of the meanings of human and nonhuman *-er* nominals in relation to the central sense of *-er* ('a human occupationally performing an action,' abbreviated in Figure 6 as 'Professional Human Agent'). The arrows between categories represent minimal conceptual links. The number of links from the central sense iconically reflects what we call the *conceptual distance* from the central sense. Again, darker solid arrows represent metaphorical mappings, i.e. those extending leftward from Professional Human Agent to nonhuman referents that are "like" human Agents; lighter open arrows represent metonymic links, i.e. those extending up/down and rightward from Professional Human Agent. The up/down metonymic links from Agent extend to other human referents (e.g. *dreamer, owner*) conceptually distanced from the central sense in terms of such scalar parameters as 'agentivity,' 'habitualness.'[8] The metonymic links extending rightward from the central sense lead to nonhuman participants in the Prototypical Transitive Scenario (see section 2) that are conceptually contiguous to the Agent participant.

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8. Though these *-er* nominals denote humans (other examples are: *believer, idler, loner, left-hander, '56-er, widower, six-footer*) that are conceptually linked to the central sense, we have refrained from discussing them extensively for reasons of space and refer the reader to Panther & Thornburg (2001: section 3).

With the exception of the setting component Time, English exploits Instrument, Location and Patient participants for -er formation.
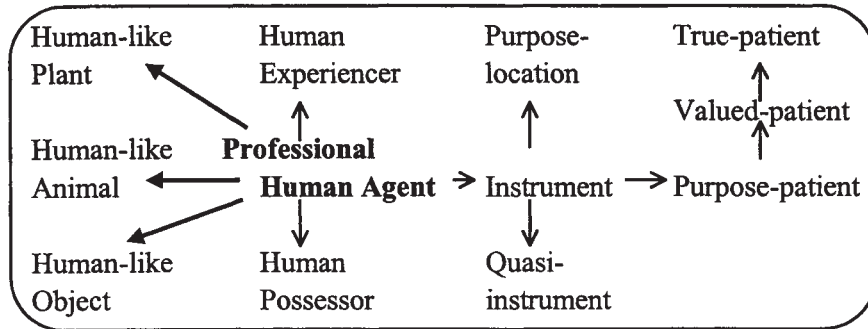
Human-like Plant	Human Experiencer	Purpose-location	True-patient
Human-like Animal	**Professional Human Agent** → Instrument →		Valued-patient Purpose-patient
Human-like Object	Human Possessor	Quasi-instrument	

Figure 6. Object-level metaphoric and metonymic extensions from the central sense of -er

So far we have not discussed the assumption that the conceptual links postulated between e.g. human Agent and Instrument, or Instrument and Purpose-patient, are indeed metonymic, or whether those assumed between, say, human Agent and Animal are indeed metaphoric. The answer we want to justify in what follows is that, at least in part, the nature of the links is a matter of how a conceptualiser *views* them. Figure 6 is only one possible network but does not exclude other ways of accounting for the conceptual links.

Consider for example the "metaphorical relation" between human Agent and designations for certain (especially domestic) "working" animals. On the one hand, for many people, a retriever (breed of dog) is like a human being, capable of goal-oriented action and thus acting as an almost independent intentional agent. On the other hand, the connection between human and domesticated animals may also be conceptualised as a metonymic link. A retriever may be regarded as an (animate) Instrument used by humans for hunting purposes – just like a bottle opener is used for opening a bottle. If we assume that a cognitive model of human beings includes the information that they use tools, instruments, and means to achieve their goals, etc., then we can analyse the relation between human Agent and Animal using

Ruiz de Mendoza and Díez's (*497) terminology as a target-in-source metonymy.

Similarly, we argue that the relation between human Agent and Instrument can be regarded as either a metonymic or a metaphoric mapping. It is certainly quite plausible to regard the instrumental sense of *-er* nouns as a metonymic extension from the agentive sense. Given that humans use instruments in achieving goals, the same line of reasoning as above can be applied: Instruments are part of some sufficiently general human Agent model and one therefore can assume a metonymic mapping from a larger matrix domain into a smaller subdomain (again a target-in-source metonymy in the sense of Ruiz de Mendoza and Díez*). Instead of postulating a metonymy AGENT FOR INSTRUMENT one could also focus on the agentive nature of (at least) a subset of Instruments. An argument in favour of this position would be that, at least in English, Instruments can indeed often be used in the same kinds of constructions as human Agents; e.g., they can occur as the subject of transitive sentences with action verbs. One would thus be led to analyse Instruments as metaphorical Agents, with properties of the latter mapped onto corresponding properties of the former.[9] The Instrument *dishwasher* could thus be analysed as in Figure 7 or in Figure 8:
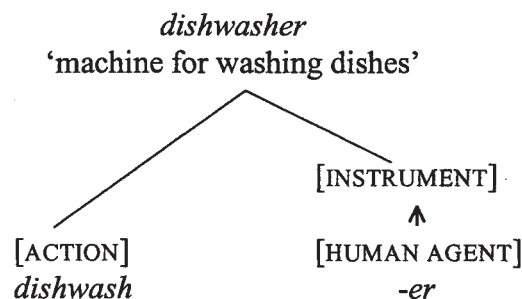

Figure 7. A metonymic analysis of *dishwasher*

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9. The thesis that "many cases [of meaning generation] can be viewed as metaphor or metonymy, without the one way of understanding excluding the other" is also advocated by Bartsch (*71).
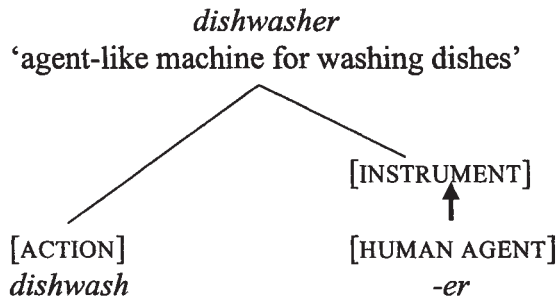
dishwasher
'agent-like machine for washing dishes'

[INSTRUMENT]

[ACTION]   [HUMAN AGENT]
dishwash   *-er*

Figure 8. A metaphoric analysis of *dishwasher*

4. *-er* nominals with event referents

So far we have discussed only *-er* nominals that denote *objects* conceptualisable as components within an idealised action scenario, i.e., denotata that are Agents (and Agent-like), Instruments, Patients, etc. But a very interesting property of *-er* nouns is their capacity to denote not only *things* (humans, animals, plants, objects (concrete/abstract), substance) but also *events*. In sections 4.1 – 4.3 we will defend and illustrate the thesis that the conceptual link between things and events is a case of REIFICATION that is achieved by means of the EVENTS ARE OBJECTS metaphor, which provides yet more senses of this extremely productive suffix. We will show that the EVENTS ARE OBJECTS metaphor and its submetaphors allow specific conceptual roles in the Transitive Scenario to be mapped onto events. The result of this kind of mapping is that events themselves are metaphorically viewed as being like human Agents, Instruments, or Patients. There are, however, other event *-er* nominals that have no such semantic role specification, e.g. *kegger* 'beer party.' These are discussed in section 4.4. The referents of this type of event nominals are not conceptualised as metaphorical Agents, Instruments, etc., but merely denote events as such. Their senses are generated by the generic EVENTS ARE OBJECTS metaphor. In addition, these cases require complex metonymic elaboration of their bases for their interpretation.

In section 4.5 we summarise our analysis of event-level *-er* nominals. Finally, in section 4.6 we consider the question of whether there is a PARTICIPANT FOR EVENT metonymy, alongside the well-established EVENTS ARE OBJECTS metaphor, that operates on the *-er* suffix.

4.1. Agent/causer events

As an example of an "agentive" event, consider a suspenseful movie, i.e. a *thriller*. We assume that this narrative event is metaphorically likened to the human Agent in the Transitive Scenario. The base in nominals like *thriller* names the "action" that the agentive event "performs" on the experiencer. A simplified schema of this Agent event *-er* nominal is given in Figure 9:
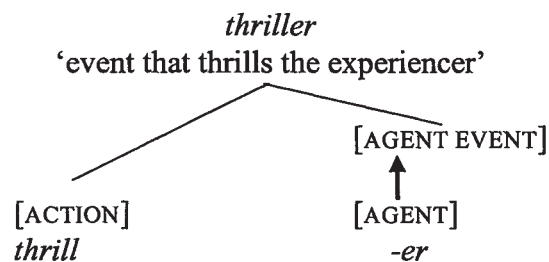

Figure 9. Metaphoric structure of *thriller*

Other *-er* nominals that exhibit the metaphor AGENT EVENTS ARE AGENTS, which is a submetaphor of EVENTS ARE OBJECTS, are *chiller*, *stunner*, *bummer* or weather events like *drencher*, *gullywasher*, *sizzler*, and *scorcher*.

Somewhat more complex are event nominals such as *groaner*, *howler*, and *laugher*. A groaner does not "groan you" in the same sense that a thriller "thrills you.' *Groaner* denotes an event, often a bad joke, which *makes* the experiencer groan. An analogous analysis applies to *laugher* and *howler*. It seems therefore that these formations involve an EFFECT FOR CAUSE metonymy; what they name in the base is the resultant effect (e.g. the activity of groaning) on the

experiencer of the event. Thus there is a metaphorical mapping from the Agent domain into the domain of causing event (coded by the *-er* suffix) and a metonymy that operates on the meaning of the base (an activity) and relates it to the cause of this activity. These metaphorical and metonymic processes are diagrammed for *groaner* in Figure 10.
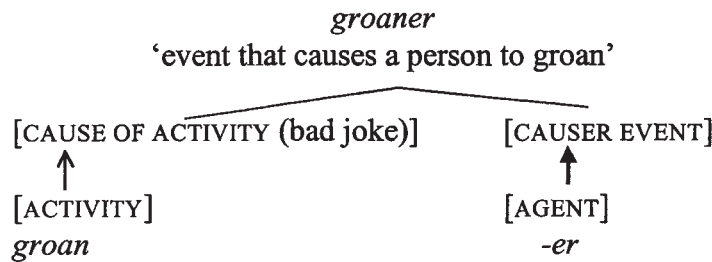
groaner
'event that causes a person to groan'

[CAUSE OF ACTIVITY (bad joke)]   [CAUSER EVENT]

↑   ↑

[ACTIVITY]   [AGENT]

groan   *-er*

Figure 10. Metonymic and metaphoric structure of *groaner*

4.2. Instrument events

We have discussed the event *-er* nominals in section 4.1 above to illustrate how the EVENTS ARE OBJECTS metaphor allows us to conceptualise events as Agents or Causers in the idealised Transitive Scenario. But since many events, such as the narrative events of books and films, are intentionally designed to produce effects on the experiencers of these events, the boundary between Agent/Causer event and Instrument event is fuzzy. The movie *Ghost*, a *weeper*, may be conceptualised as a Causer event in that a (perhaps unintentional) effect on viewers is that they weep. But one might just as easily consider *weeper* (or for that matter, *thriller*) to be a movie that is *designed* to produce weeping and therefore appeal to a particular market share. In either case, as Agent/Causer event or as Instrument event, these *-er* nominals are motivated in our analysis.

We now look at some event nominals that have a clear instrumental function, i.e., they are designed for particular purposes. They involve the submetaphor INSTRUMENTAL EVENTS ARE INSTRUMENTAL

OBJECTS of the generic EVENTS ARE OBJECTS metaphor. Examples include *mixer, fundraiser, updater,* and *(season) opener.* The first three denote events that have the instrumental function to (metaphorically) mix males and females, raise funds, and update an audience, respectively. *Season opener* is an event that *performatively* functions to open the (concert, baseball, etc.) season. It is exactly parallel to an object Instrument such as *can-opener* (see section 3.3.1) in that the metaphorical mapping to the event level preserves the conceptual structure of the source domain. Note that, as elsewhere, the conceptual structure of some formations is more complex than indicated above. For example, a mixer is not only an event with the purpose of "mixing people" but, in addition, is thought of as a *means* to accomplish sociability (e.g. at a party).

4.3. Patient events

Finally, there are even a few examples where the EVENTS ARE OBJECTS metaphor has an object Patient as its source domain. Examples are *keeper* and *forgetter.* The word *keeper* 'some *thing* worthy of being kept' can be projected metaphorically onto the event level so that *keeper* denotes an experience worthy of being "kept' in one's memory or preserved, e.g. on a video-recorder. *Forgetter* can be used to characterise an immemorable event, e.g., *That movie? Terrible! A real forgetter!,* but is less likely to be used to denote an object worthy of being forgotten. These cases are thus parallel in their conceptual structure to the ones discussed as Valued-patients in section 3.3.4.

4.4. Event nominals with no semantic role specification

Finally, there is a class of event -*er* nominals whose referents have no specific roles in a Transitive Scenario; they merely denote an event as such. In these cases the event referent is metonymically accessed by the base, which names an essential component of the event referent (cf. the concluding remarks in section 3.1), such as a time or lo-

cation component, a subevent, an affected entity, a means to reach a goal, etc. Examples of this type includes *rear-ender, kegger, tail-gaiter, sundowner, breather, beaner, bender, in-the-parker* 'homerun hit within the baseball park,' *back-hander* 'tennis stroke.'

Many members of this class have nonverbal bases and are comparable to object-level *-er* formations with nonverbal bases discussed in section 3.1. For example, *rear-ender* evokes a car accident scenario; the metonym in the base names the affected entity in the event. *Kegger* denotes a beer drinking party, naming the essential item in its base. *Tailgaiter* is a kind of picnic in which the tailgate part of a car is used for a table. *Sundowner* is a cocktail party held at sundown. A more complex example is *beaner* 'a hit on the head,' which in its slang use has a metaphorical base meaning 'head,' the affected entity in the event denoted by *beaner*. We represent the overall conceptual structure of this nominal in Figure 11. Interestingly, *beaner* lacks an object-level interpretation, indicated by an asterisk in the diagram, but is nevertheless motivated by the OBJECTS ARE EVENTS metaphor. We consider the absence of an object-level interpretation as an accidental gap.
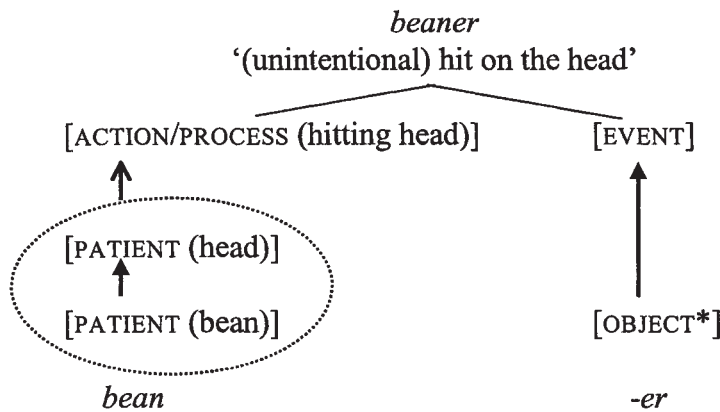

Figure 11. Metaphoric and metonymic structure of *beaner*

The encircled portion of the diagram in Figure 11 is elaborated in more detail in Figure 12.
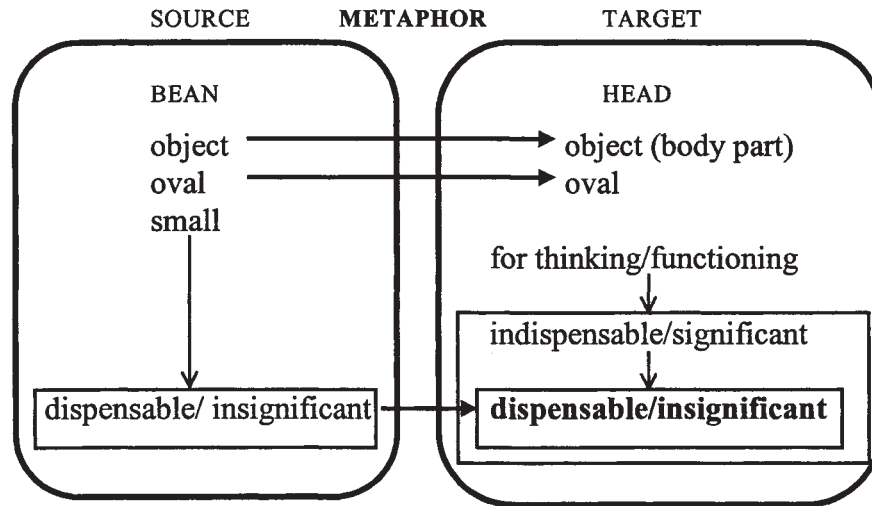
SOURCE   **METAPHOR**   TARGET

BEAN

object ──────────────► object (body part)
oval ──────────────► oval
small

dispensable/ insignificant ──► **dispensable/insignificant**

HEAD

for thinking/functioning

indispensable/significant

Figure 12. Elaborated conceptual structure of the base of *beaner*

Figure 12 (cf. Figure 4 for *hoofer*) depicts the metaphorical mapping from the source domain concept BEAN to the target domain concept HEAD. In the source domain one of the attributes of a bean, namely its small size, is metonymically linked to the attribute 'dispensable/insignificant.' (Compare a similar meaning in *peanuts* 'small; trifling amount of money.') It is this contingent attribute that is metaphorically mapped into the target domain, thereby providing a new structural element that is not part of the inherent structure of the target domain. This new property, represented in bold face, clashes conceptually with a metonymically derived attribute of HEAD, namely 'indispensable/significant,' which is considered to be a feature of human heads. This clash gives rise to humorous effects, not untypical of slang expressions that often rely on the conventional sense of a word to metonymically evoke its opposite (e.g. *bad* meaning 'good;' see Vosshagen 1999). Secondarily, one might therefore interpret the relation in the target domain between 'indispensable/significant' and 'dispensable/insignificant' as an antonymic metonymy induced by the metaphorical mapping.

In contrast to the above, there are event nominals with no role specification that have a verbal base. One such example is *bender*. As with the other examples discussed in this section, the interpretation of the event nominal requires metonymic elaboration of the base. The base in *bender* is a metonym for a subevent in the complex drinking-spree event, which requires one to bend one's elbow repeatedly. A simplified schematisation for *bender* is given in Figure 13.
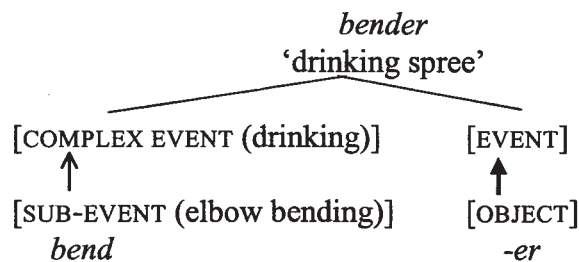

Figure 13. Metaphoric and metonymic structure of *bender*

Examples like *bender* instantiate an important point. Recall that in section 3.1., with regard to the central sense of *-er*, we made a distinction between *-er* nominals with verbal bases that *directly* evoke the professional/occupational scenario and those with nonverbal bases that *metonymically* access this scenario. Cases such as *bender* demonstrate that verbal bases are not immune to metonymic elaboration. Thus, we contend that the traditional dividing line that most researchers explicitly or implicitly draw between verb-based and nonverb-based *-er* nominals is not well-founded. Data like the above support our view that an account of *-er* nominals should include all formation types.

4.5. Summary of *-er* event nominals

We have shown that from the central sense of *-er*, a person professionally engaged in an action scenario, the denotational range of *-er* can be extended to the event level via reification, i.e. by means of the

EVENTS ARE OBJECTS metaphor. We assume that this metaphor is at work even in those cases where there is no corresponding object-level interpretation of the event-level *-er* nominal. We have demonstrated that remarkable structural parallelisms exist between object-level and event-level *-er* nominals: Agent, Instrument, and Patient functions can be found on both levels.[10] As to event-level nominals that have no metaphorically mapped semantic role, their understanding involves interpreting the base as naming a crucial object, setting component, or salient subevent that functions to metonymically evoke the target event. In the most general sense these metonymies could be regarded as PART-WHOLE metonymies. The meanings of such formations are often opaque and require extensive knowledge of cultural scripts. Figure 14 presents the main features of our analysis of event-level *-er* nominals. The open arrows between boxes represent conceptual contiguity (presumably metonymic) links, as in Figure 6.

4.6. -er *event nominals: Metaphor or metonymy?*

We now turn to the nature of the projection from the object level to the event level in the interpretation of *-er* nominals that, so far, we have characterised as a metaphoric mapping. As we pointed out in sections 4.1. – 4.3., there is a *structural resemblance* between human Agent and Agent/Causer event, between Instrument and Instrumental event, and between Patient and Patient event, respectively, that supports the claim that the mappings between the object domain and the event domain are indeed metaphoric in these cases. Moreover, we find *-er* formations that are systematically ambiguous between an object and an event reading. For example, an *upper* may refer to a

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10. Another parallelism manifests itself in the exploitation of the EFFECT FOR CAUSE metonymy on both levels. Indeed, in many formations there is systematic ambiguity: e.g., *sleeper* can denote both an object (a sleeping pill) and a boring event; in both cases the base denotes the effect of an unnamed cause (see section 5).

drug (as illustrated in section 3.3.1.) but also to an event that makes one happy; a *howler* may refer to a person or an animal, but also to an event that causes howling; a *groaner* can be a human Agent that groans or a Causer event that makes people groan.
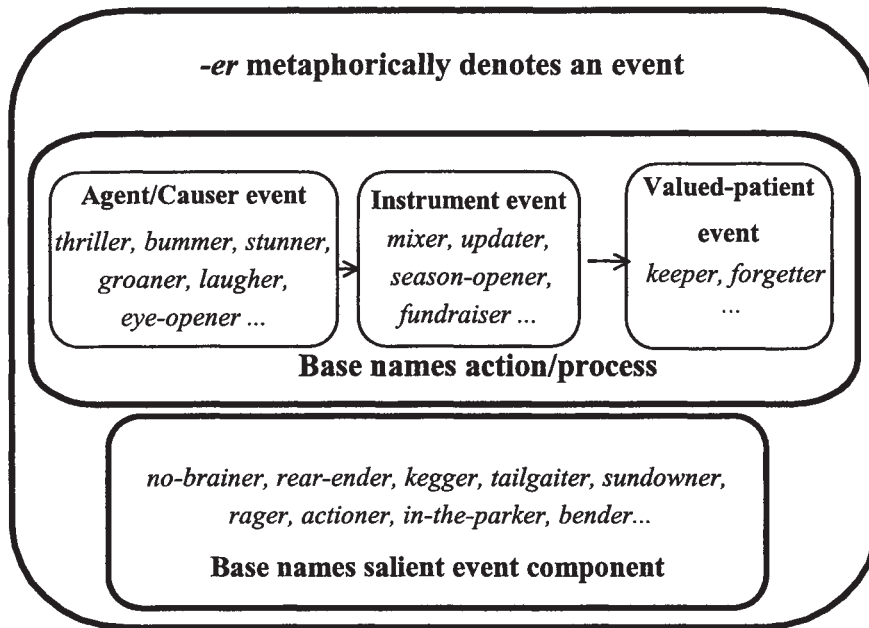
Figure 14. The extension of *-er* via reification to denote events

However, there seem to exist some cases where the event reading of an *-er* nominal does not seem to be motivated by a metaphor, but by a metonymy such as PARTICIPANT FOR EVENT, i.e., a participant crucially involved in an event may come to stand for the event itself. This metonymy, which has been argued to operate in other domains of grammar, e.g. predicative adjective constructions in English (see Brdar-Szabó & Brdar 1999 for an insightful analysis), seems to be operative in such *-er* nominals as *cliffhanger*, whose conceptual structure we represent in Figure 15.

cliffhanger
'suspenseful event'

[EFFECT OF ACTIVITY (suspense)]   [EVENT]

[ACTIVITY (cliffhanging)]   [HUMAN PARTICIPANT]
cliffhang   *-er*

Figure 15. A metonymic analysis of the event structure of *cliffhanger*

It does not seem to make sense to regard the "literal" interpretation of *cliffhanger* 'human being hanging from a cliff' as being structurally similar to the target concept 'suspenseful event.' Instead, we propose that in this case the *-er* suffix provides a source concept HUMAN (EXPERIENCER) PARTICIPANT that is metonymically mapped onto the target concept EVENT, i.e., 'event that the human participant is crucially involved in.' The specific event is designated by the base *cliffhang-* and is elaborated metonymically by the CAUSE FOR EFFECT metonymy.

This example has been discussed in some detail to show that event readings of *-er* nominals are not wholly reliant on metaphorical mappings but can also be generated via metonymy. We cannot pursue the question here whether this is an isolated instance among *-er* event nominals (cf. *bodice ripper*). Nevertheless, conceptualising persons in terms of the events they are involved in is quite common. Witness the use of proper names to stand for the activities their referents are involved in as *He did a Napoleon for the camera* (see Gibbs 1994: 339ff).

5. A case study in polysemy

Thus far we have only mentioned the issue of polysemy of individual *-er* nominals in passing, in particular the ambiguity between the object and event reading of some items (e.g. *upper, groaner*). We now

want to demonstrate that many of the conceptual categories we have postulated manifest themselves in the various senses of single lexical items, lending support to our claim that the suffix *-er* has an array of conceptually related meanings. A particularly rich example for this purpose is *sleeper*, for which we consider several readings.[11] Figure 16 presents two central senses of *sleeper* 'one inclined to sleep' and 'one sleeping' (which seem to correlate with predicational and referential use, respectively), around which are arrayed four metonymic and three metaphoric extensions from the central sense.
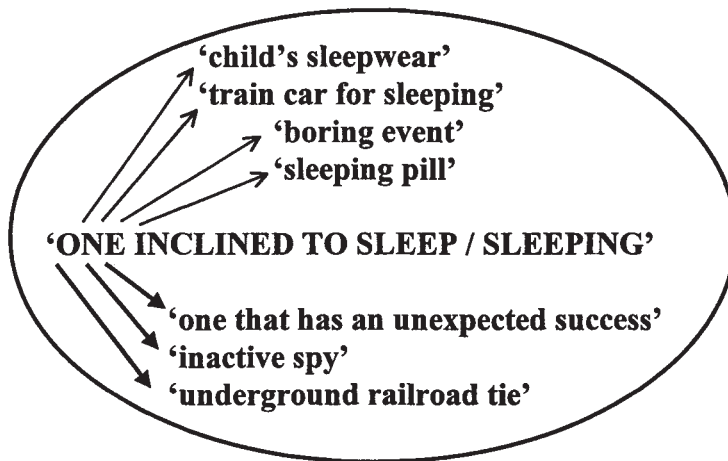

Figure 16. Some readings of *sleeper*

The point we want to demonstrate is that each of these meanings of *sleeper* can be matched with a particular conceptual category from the set of those represented in Figures 6 and 14; these matchings are schematically depicted in Figure 17 below. The reader must keep in mind that agentivity is a scalar concept (see section 2). With this proviso, we can associate the basic senses of *sleeper* with the category 'human Agent' although in this case a human that is certainly low on the scale of agentivity. Each of the extended senses is associated with

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11. Wiesner (2001) provides additional senses, all of which can be accommodated in our analysis but are not included in our discussion for reasons of space.

its respective category label; many details of metaphoric and metonymic elaboration of bases must be omitted.
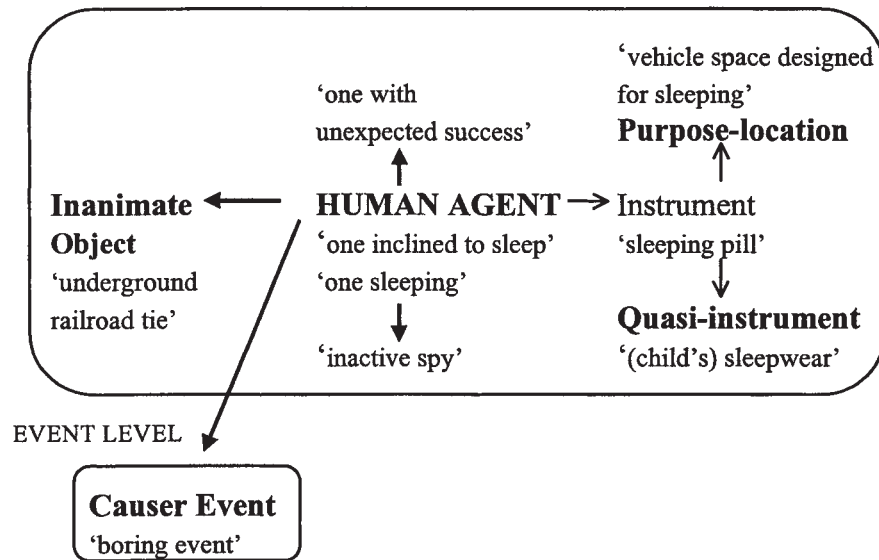
OBJECT LEVEL

EVENT LEVEL

Figure 17. The polysemy of *-er* as manifest in *sleeper*

6. Remarks on the productivity of *-er*

In an account of *-er* nominals, we would be remiss if we did not remark on the huge number of formations in this morphological pattern – easily surpassing, for example, those of two rival agent nominalisers - 'nt (spelled '-ant' and '-ent') and *-ist* – as well as the novel *-er* expressions one encounters almost daily. As cases of either morphological productivity (i.e. new forms typically not noticed) or morphological creativity (remarkable neologisms) – a distinction noted in Plag (1999: 13) – there are: *spammer* 'one who (occupationally) sends out *spam* ('unsolicited junk e-mail'),' *motor-noters* 'journalists who write about automobiles,' *back-bencher* 'lesser MP' but also 'model of car with a "bench" back seat,' *road-rager* 'one who ha-

bitually expresses rage while driving,' *Green-Earther* 'environmental activist,' *same-sexer* 'one disposed to homosexual behaviour,' *trench-coater* 'teenage nihilist group member,' *Gen-X-er* 'member of post-Baby Boom generation,' *pro-choicer* 'advocate of abortion rights' and on and on. In the same vein, one would not be surprised if the character Charley Walnuts in the popular TV series about the mob, *The Sopranos*, were referred to as the *knee-capper*, employed to shoot adversaries in the knees.

The productivity of a word-formation process is often linked to its *semantic coherence* (see Bauer 1983: 98), where semantic coherence is intended to mean 'semantic predictability.' The putative generalisation is: the more productive a derivational affix, the more predictable its meaning.[12] We argue that semantic coherence should not be understood in the narrow sense of predictability. Probably no one would contest that *-er* formations are highly productive. Yet, it cannot be predicted that e.g. in one reading of *weeper* the *-er* suffix has an event meaning and that its base denotes the effect of some causing event. But there is a certain likelihood that there are other formations of the same type, given the genericness of the EVENTS ARE OBJECTS metaphor and of the EFFECT FOR CAUSE metonymy – and indeed there are, as we have shown in section 4.1. We have amply demonstrated in the course of this chapter, that, though not strictly predictable, the polysemy of *-er* is semantically coherent, showing that the capability of *-er* to designate a wide range of referent types ((in-)animate and abstract objects, substances, events) and semantic role types (Agent, Possessor, Instrument, Location, etc.) is *motivated* by conceptual links to the central sense. Thus, it makes sense to broaden the meaning of *semantic coherence* to encompass 'motivated sense extensions,' with 'predictability' as the limiting case.

Bauer (1983: 99) also notes that "the degree of productivity varies according to the strictness of the limitation on the base." To this we add that productivity also varies according to restrictions (and the

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12. Aronoff (1976: 388f) illustrates this hypothesis with the contrast between *-ness* and *-ity* nominalisations in English. According to Aronoff, the meanings of the former are highly predictable whereas the senses of the latter are conceptually much more complex (and consequently less predictable).

lack thereof) that are placed on the suffix. As mentioned above, the -er suffix has a variety of motivated senses that can be related via metaphoric and metonymic links to the basic sense. We have also shown that the base of an -er nominal can accommodate any *nonverbal* category, or even *phrasal group*, as long as the latter functions as a metonym for a particular target scenario. Likewise, there are no syntactic limitations on the *verbal* base of -er nominals; the only constraints on deverbal -er formations are conceptual. Verbal bases that do not contribute to a reading of the -er nominal in terms of the central sense or one of its metaphoric and/or metonymic extensions are unlikely candidates for this morphological pattern.[13]

This state of affairs for -er contrasts sharply with two "rival" agent nominalisers -'nt and -ist. Agent nouns in -ist were historically formed with Greek and Latin bases, some semantically linked to profession/occupation/skill, e.g., *geologist, cyclist, ventriloquist* and thus corresponding to the central sense of -er nominals – except that their non-verbal bases do not directly denote actions and activities, but require metonymic operations on the base analogous to -er formations like *tinner*. For example, in *novelist* (cf. Old English *bócere* and present-day *costumer*), -ist is identical in meaning and function to -er: Like *costumer, novelist* denotes a professional human Agent by metonymic extension of its nominal base, in this case the effected object in the professional action scenario. Clearly then, metonymic processes operate on bases of -ist Agent nominals. There are also -ist formations that denote adherents to religious faiths, philosophical doctrines, or ideologies that may correlate with certain behavioural dispositions (*Calvinist, deist, fatalist*) – a category that is also found in -er formations.[14] Despite the operation of metonymies on -ist bases, there seem to be virtually no metonymic extensions from the agentive -ist to denote conceptually contiguous components in an action scenario, such as Instrument, though perhaps *catalyst* could stand as such an example. As to the formal properties of, and con-

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13. For a fuller discussion of unlikely -er nominals see Panther and Thornburg (2001: section 7.1).

14. A detailed account of such -er formations is given in Panther and Thornburg (2001: section 3.3).

straints on, *-ist* formations, there are sometimes corresponding verbs in *-ise*, e.g. *specialist, analyst*, and corresponding abstract nouns in *-ism*, e.g. *Calvinist, deist, fatalist*. More recently, one finds non-Latin/Greek nouns and even phrasal bases, as in e.g. *balloonist, semi-finalist, second adventist*. Yet *-ist* does not approach the productivity of *-er*. The resistance to native verbs in the base (*shootist* being a rare example) greatly curtails the ability of this suffix to denote human Agents by their actions and activities. Nor does metaphor seem to operate on Agent *-ist* formations to extend the range of referents from human Agent to "human-like" animals, plants, objects, let alone events.

Unlike -ist (but like -er) -'nt may denote not only a human Agent, e.g. servant, regent, president, attendant, proponent, claimant, resi-dent, immigrant, participant, suppliant, defendant, protestant, ac-countant, litigant, penitent, but also an Instrument referent, e.g. (in-sect) repellent, relaxant, stimulant, irritant, emollient, expectorant, antifoggant, deodorant, coolant, and even Purpose-patient referents, e.g., ingestant, inhalant. Whereas *-ist* exhibits metonymic processes operating on the base (novelist) but not on the suffix itself, the con-verse seems to be the case for -'nt formations. Like *-ist*, -'nt forma-tions prefer nonnative bases, but complementary to *-ist*, their bases tend overwhelmingly to be verbs, nonverbal bases in -'nt being rare, e.g. annuitant 'person connected to annuity' (cf. violinist). Whereas the productivity of *-ist* is curtailed by a dispreference for nonnative verbs in the base, the productivity of -'nt to denote human Agents is limited to mainly intransitive verb bases. Instrument and Patient ref-erents of -'nt nominals, however, are grammatically restricted to transitive verb bases and further restricted semantically to denoting only chemical agents/substances, i.e. Instruments. As with *-ist* for-mations, those with -'nt do not lend themselves to metaphorical pro-jection.

Our point in making this brief comparison of *-er* to two other agent nominalisers has been to account for the varying degrees of productivity among the three suffixes in terms of restrictions (or the lack thereof) on their bases and on their suffixes as well. As a conse-quence of various formal and semantic restrictions on *-ist* and -'nt

formations there is little, if any, polysemy in individual formations, in contrast to *-er* formations (e.g. *sleeper*). But more important for the purposes of this chapter, the comparison was also undertaken to reveal that the operations of metaphor are severely restricted with both -'nt and *-ist* formations; the operations of metonymy are also restricted in each case, though complementarily. Metonymy was shown to operate on the suffix -'nt (but not its bases); metonymy was shown to operate on the bases of *-ist* (but not on the suffix itself).

In contrast to these limitations on -'nt and *-ist* formations, *-er* nominals readily yield to the operations of metaphor and metonymy on the base (whether verbal or nonverbal) as well as on the suffix. To make the contrast very clear at this point, we briefly illustrate again the applicability of these two processes on both base and suffix of *-er* words with new examples. Consider e.g. *nutter*. The reading 'human being characterised by being insane (off his *nut*)' depends on a metaphorical expansion of the base via the THE HEAD IS A NUT metaphor, a submetaphor of the generic metaphor BODY PARTS ARE FRUITS/ VEGETABLES that is exploited in many slang/colloquial expressions. The operation of metonymy on a base is evident in one sense of *breather* (usually collocated with *heavy*). Here the sense 'salacious telephone caller' depends on a metonymic expansion of the base via a MEANS ('breathe on telephone') FOR END ('sexual purpose') metonymy. As for the polysemy of *-er* itself, consider a second reading of *nutter* 'nut-filled cookie,' which derives from a metonymic expansion of *-er* from human Agent to Patient.[15] The event-level reading of *-er* in *breather* ('short rest period during which one catches one's breath') comes about via the EVENTS ARE OBJECTS metaphor operating on *-er* and at the same time the MEANS ('breathe') FOR END ('relaxation') metonymy in the base. Such a rich array of senses of *-er* formations is unrivaled in the potentially competing formations in *-ist* and -'nt.

Two new *-er* formations encountered by the authors for the first time in 2001 deserve special mention. They are *Hotwingers* and

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15. There seems to be no attested agentive use of *nutter* 'one cracking nuts;' the entrenched *nutcracker* most likely blocks an instrumental reading of *nutter*.

Chippers. In accordance with Langacker's (1991: 48) claim that "novel instantiations are most commonly sanctioned by subschemas representing local rather than global generalisations," we can easily show that *Chippers* (the name of a French fry shop) exploits the relatively nonproductive subschema 'Purpose-location' (cf. *diner* in section 3.3.3) in the Prototypical Transitive Scenario as well as the very productive nonverb-base subschema for *-er* formations having Agent and Instrument referents. We can account for *Chippers*, then, as denoting a Purpose-location in which the *activity* of eating chips (i.e. 'French fries' in American English) is metonymically accessed from the base *chip* (in addition to the inflectional plural *-s*, which is dislocated to the right (outer layer) of the formation under a well-known morphological constraint). Similarly, *Hotwingers* 'barbecued chicken wings' exploits the relatively nonproductive 'Patient' subschema in the Prototypical Transitive Scenario and the very productive nonverb-base subschema for Agent/Instrument referents. From a print advertisement it is evident that *Hotwingers* is a brand name for a food product. Remarkably, in this example, both the base and the suffix denote one and the same referent, yet retain their distinct functions; as a nonverbal base, *hotwing(s)* provides metonymic access to the eating action the hotwings are intended to undergo. The suffix in *Hotwingers*, in denoting a designed Patient, imparts the sense that the denotatum is particularly suited (i.e. very tasty) for the implicated activity (see section 3.3.4 on Purpose-patients). Though we have argued above (section 3.3.5) that relatively lower productivity correlates with greater conceptual distance from the central sense of *-er*, i.e. as with Purpose-locations and Patients, these local subschemas in the general action scenario may interact with the very productive nonverb-base subschema to sanction creative innovations.

Two important points emerge from the discussion in this section: (i) bound morphemes may behave no differently from "ordinary' lexical items with regard to their potential to metaphorically and metonymically extend their meanings, and (ii) the productivity of the *-er* pattern is enhanced by its capability to exploit the operations of metaphor and metonymy. Our analysis thus supports the view that lexicon and grammar form a continuum of symbolic units.

7. Conclusion

In conclusion we quote Ronald Langacker (1991: 44), who assures us that "the picture offered by nominalisation is not one of total chaos and idiosyncrasy – there are indeed patterns to be discerned and characterised." The validity of his claim, we hope, is supported by our cognitive analysis of -*er* nominals, one that crucially involves the operations of conceptual metaphor and metonymy as the organising principles of this extremely productive word-formation process.

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