

The cognitive linguistics of incongruity resolution: Marked reference-point structures in humor

The bacillus of laughter is a bug difficult to isolate: once brought under the microscope, it will turn out to be a yeast-like, universal ferment, equally useful in making wine or vinegar, and raising bread
(Arthur Koestler, *The Act of Creation*)

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Abstract. Previous research in cognitive semantics has focused on various mechanisms of ‘dynamic’ meaning construction, like metaphor, metonymy, conceptual integration, irony and sarcasm. The present paper aims at broadening the scope of analysis to include the largely underfranchised topic of humor (in the broadest sense) in the cognitive paradigm. In a first section of the paper, it is argued that Croft & Cruse’s (in press) typology of construal operations provides a useful key for fitting in the cognitive linguistic contribution into existing linguistic humor-theoretical frameworks (as e.g. Attardo’s GTVH). In a second part of the paper, one specific construal operation, metonymy, is explored with respect to its functionality in the cognitive resolution process of humor interpretation. On the basis of a heterogeneous corpus, a range of marked reference-point constructions is abstracted and related to a higher-level strategy of balanced processing difficulty and optimal innovation (Giora 2002). The paper closes off with an overview of experimental-psychological studies relating to the present account and some questions that need further empirical backup.

1 Introduction

Since the publication of Koestler’s early cognitive scientific approach to humor in *The Act of Creation* (1964), in which he inquires into the common cognitive grounds of highly disparate phenomena like humor, artistic creativity and scientific discovery, cognitive psychologists have explored the cognitive mechanisms underlying humor interpretation. Cognitive linguistics, with its focus on cross-cognitive and conceptual aspects of language use, should provide an adequate framework for the analysis of the interplay of quantitative and qualitative aspects in (verbal) humor. However, humor is still a largely marginalized topic in the cognitive linguistics paradigm, in contrast to

the study of other instances of ‘creative’ and non-literal language use, like metaphor, metonymy, conceptual integration, or the potentially, but not necessarily humorous mechanisms of irony and sarcasm (Gibbs 1994; Haiman 1990; Geeraerts 2002; Giora 2001, 2003; Giora & Fein 1999a, 1999b; Attardo 2000, 2001b, to name just a few).

The aim of the present study is twofold. In the first part of the paper, we will situate a possible cognitive linguistic contribution against the background of the ongoing debate in (linguistic) humor research. We will argue that insights from the most influential linguistic humor theories (Raskin 1985; Attardo 1994, 2001; Giora 1991) are to a large extent compatible with the cognitive linguistic framework, and that both can mutually benefit from each other’s insights. Of significant importance to humor theories is the central cognitive linguistic notion of *construal*, which covers a range of conceptualization phenomena (metaphor, metonymy, conceptual blending, figure/ ground effects, etc.) insufficiently dealt with in existing humor studies. Based on Croft & Cruse’s (in press) typology of construal mechanisms, we provide some of the research perspectives for cognitive linguists, and a (non-exhaustive) overview of recent work on humor in that paradigm, among which the contributions to the theme session on ‘Cognitive Linguistic Approaches to Humor’, held at the 8th International Cognitive Linguistics Conference (Logroño 2003). In a second part of the paper, we will systematically address one specific construal mechanism in its relevance to humor processing, viz. metonymy as a type of reference-point construction. A restricted empirical analysis reveals that verbal as well as non-verbal incongruity-resolution humor makes use of marked reference-point structures in order to complicate or distort the conventional, unmarked (salient) inference process, so as to achieve ‘optimal innovation’ (Giora 2002). By approaching the material with these cognitive linguistic tools, new light is shed on poorly addressed theoretical questions (e.g. what is the role of ‘the unsaid’ in humor?) as well as experimental issues (e.g. what is the influence of the complexity of the resolution process on humor appreciation?).

2 Linguistic Humor Theories

2.1 Current issues and insights: Foundations to build on

Despite the fact that research in linguistics has largely dealt with humor phenomena only in the margin, there is a line of research that must be accredited also in cognitive linguistic approaches. More specifically, the humor theoretical accounts developed by Raskin (1985), Norrick (1993, 2001), Graesser et al. (1989), Giora (1991, 1997, 2002, 2003) and especially Attardo (1994, 1997, 2001a, 2002) provide a necessary background in the field, in part because their grounding in cognitive psychological models of humor (incongruity-resolution (IR) models) ties in with the basic philosophy of cognitive linguistics.¹ Indeed, although it does not present itself in the larger terminological-conceptual framework of CL, Attardo's *General Theory of Verbal Humor* (GTVH) is cognitive linguistic in the sense that it explores the interface between language and cognition in highly creative language use. It does so through the study of the interaction of a combination of contributory parameters (language structural as well as interpersonal, sociolinguistic and purely cognitive; *infra* 2.1.1).

In essence, the conclusion that this research tradition is compatible with the cognitive linguistic view is intended simultaneously as a supportive and cautionary argument. Supportive in the sense that it corroborates the claim made in the few contributions to humor research within the CL framework (Coulson 2000, *in press*; Bergen & Binsted, submitted; Giora 2003) that cognitive linguistics provides articulate tools for the study of a complex, creative and multidimensional phenomenon as is humor. Cautionary on the other hand, in that the compatibility holds the risk of overstating the contribution of the CL apparatus, leading to repeated claims and circular arguments.² Thus, we argue that one should avoid implementing the cognitive linguistics framework without acknowledging the insights from existing research. In this respect, the present paper explores some of the 'waste land' and

¹ The two-stage model of incongruity and resolution was introduced to psychology by Suls (1972), Rothbart (1976), Schultz (1976), among others.

² A similar argument can be found in Ritchie (2003: 8), who argues in favor of *data abstraction between theories*, "in which one theory (humour) postulates just those constructs it seems to need from the other theory or discipline (e.g. linguistics)".

poorly addressed questions in existing linguistic and cognitive humor research, with special focus on issues for which a cognitive linguistic approach may provide (partial) solutions. Before we do so, a brief overview of the state of affairs in current systematic humor research is sketched out.

Cognitive linguists working on humor will find theoretical foundations for their claims in two largely compatible lines of research: on the one hand, Attardo's GTVH (an offshoot of Raskin's *Semantic Script Theory of Humor* (1985), and Giora's (1991, 1997, 2002, 2003) work on *graded salience* and *optimal innovation* on the other. Both approaches make claims that extend beyond the purely linguistic level of semantic (or constructional/grammatical) ambiguity. The following two sections briefly deal with these two accounts.

2.1.1 SSTH and GTVH

As mentioned above, the foundation for the GTVH is Raskin's Semantic Script Theory of Humor (SSTH, 1985), which basically argues that jokes revolve around the opposition, overlap and switch between two (or more) scripts or frames.³ Jokes, on this view, are partly or fully compatible with two different, (con)textually opposed scripts, only one of which is saliently activated (profiled, primed, ...) in the first part of the text. The punch line of the joke turns out to be incompatible with the profiled first script interpretation (*incongruity*), but there is a lexical cue in the text (script-switch trigger) that enables the switch or shift from the first interpretation to the second, backgrounded script (*resolution*; cf. Coulson's (2000) account of frame-shifting). Consider example (1), a joke discussed *ad nauseam* in script-based humor research. The first part of the joke text up to the punch line saliently activates the frame of a DOCTOR-PATIENT script (lexical handles: *doctor*, *patient*, *bronchial whisper*). However, the doctor's wife's reply (script-switch trigger) in the punch line forces the reader to backtrack and reinterpret the text in a different script, viz. a LOVER

³ The notion of a script, which was adopted from cognitive psychology and Artificial Intelligence (Schank and Abelson 1977), covers all information (semantic as well as encyclopedic) that is activated along with a particular concept (object, event, characteristic, etc.): "It is a cognitive structure internalized by the speaker which provides the speaker with information on how a given entity is structured, what are its parts and components, or how an activity is done, a relationship is organized, and so on, to cover all possible relations between entities (including their constituents)" (Attardo 2001a:2-3). Raskin (1985: 81) provides a more formal definition: "[E]very script is a graph with lexical nodes and semantic links between the nodes. In fact, all the scripts of a language make up a single continuous graph, and the lexical entry of a word is a domain within this graph".

(adultery) script (script switch; frame-shifting). On reinterpreting the text in the second script, several elements receive a renewed or profiled significance (*bronchial whisper, young and pretty wife*). Essential for the humorous effect, in general, is the compatibility of the text with two (highly) opposed scripts.

- (1) “Is the doctor at home?” the patient asked in his bronchial whisper. “No”, the doctor’s young and pretty wife whispered in reply. “Come right in”.

The GTVH adds to this semantic theory a number of parameters or *knowledge resources* (KRs) that can cooperate in the complex process of humor generation and interpretation. Table 1 provides a simplified overview of the KRs (for a detailed overview, see Attardo (1994: 222ff), 1997, (2001a: 22ff)).

PARAMETER	DEFINITION	INSTANCE
Language (LA)	Verbalization of the text: word choice, placement of functional elements, etc.	- Verbal humor (punning) based on semantic ambiguity - Position of the punch line
Narrative Strategy (NS)	Narrative structure of the humorous text (genre).	- Narratives - Q&A dialogues (e.g. (1)) - Riddles (e.g. ‘How many X does it take to...?’)
Target (TA)	Humor often aims at (social) stereotypes as ‘butts’.	- Ethnic humor - Social class humor - Feature humor (e.g. stupidity, ugliness, etc.)
Situation (SI)	The situational embedding of the joke: characters, activities, objects, setting, etc.	Example (1): the setting contributes to the salient first interpretation of a joke (which is refuted at the punch line)
Script opposition (SO)	Central requirement for the generation of a humorous effect: opposition between scripts.	Example (1): opposition between the DOCTOR and LOVER (adultery) script.
Logical Mechanism (LM)	Cognitive operation needed to achieve a (partial) resolution of the incongruity.	- Juxtaposition (‘Gobi Desert Canoe Club’) - False analogy (‘A wife is like an umbrella. Sooner or later one takes a cab’) - etc. [infra]

Table 1: KRs in the GTVH

By adopting this multidimensional approach, addressing language structural (LA), discourse analytical (NS), sociolinguistic (TA, SI) and cognitive/logical (LM) issues, the

GTVH aims at an encompassing linguistic-pragmatic (and not only semantic) account of *verbal* humor. From a cognitive linguistic perspective, the LM parameter, accounting for the cognitive mechanisms of incongruity resolution, is of particular interest, since in many cases, logical mechanisms rely on the construction of conceptual mappings.⁴ According to Attardo et al. (2002: 29), mappings serve as connection mechanisms between elements from different scripts. In section 2.2, we will argue that the broader cognitive semantic notion of mapping (extended to metonymic and metaphoric reasoning, partitioning of structure in different mental spaces, etc.) can provide a useful extension of this account.

Apart from this extension in the intratextual dimension (number of parameters analyzed) in comparison to the SSTH, the GTVH provides an additional extension in the scope of the model: the theory has been adapted so as to provide a framework for the analysis of longer humorous texts (next to jokes; Attardo 2001a).

2.1.2 Marked informativeness and optimal innovation

Giora's work on linguistic issues of humorous language use has focused mainly on ironic and sarcastic utterances, with the exception of Giora (1991, 2002, 2003), in which she specifically addresses some cognitive aspects of the joke. Her account mainly focuses on the optimal constellation of and relations between incongruous stimuli and their resolution (the SO and LM KR in the GTVH). The following two hypotheses best summarize the approach:

Marked informativeness requirement:⁵

"Jokes and point-stories are markedly informative. Their final informative messages are marked in that they are too distant, in terms of the number of similar features, from the messages preceding them" (1991: 469).

"The joke's marked constituent is least relevant but not irrelevant, that is, not entirely distant or unrelated" (ib.: 470).

⁴ Paolillo (1998) was the first to abstract a number of logical mechanisms (based on a corpus of Larson's *Far Side* cartoons). Attardo et al. (2002) critically assess Paolillo's attempt and propose a taxonomy of logical mechanisms.

⁵ Marked informativeness, on Giora's account, is defined in prototype theoretical terms: "[T]he least informative, i.e. prototypical, members are the *unmarked* members of a given set – they best represent the set and are most accessible. The most informative, i.e. least accessible, least typical or rather most marginal and most surprising members are considered *marked* in that category" (1991: 469). Translated into discourse analysis, the more amount of extra information a word, phrase or sentence provides in comparison to the preceding text, the more informative it is (informativeness is inversely proportional to (psychological) probability).

Optimal innovation hypothesis:

“A stimulus would be optimally innovative if it involves

a) a novel response to a familiar stimulus,

but

b) such that would also allow for the automatic recoverability of a salient response related to that stimulus so that the similarity and difference between the novel and the salient would be assessable.” (2002: 12)

Although both hypotheses are developed independently of the script theories SSTH and GTVH, the claims they make are to a large extent compatible.⁶ The *marked informativeness requirement*, in essence, fits into the category of IR theories of humor: the punch line of the joke needs to be markedly informative (i.e. incongruous), but at the same time, it should provide some cognitive link to the preceding text (i.e. possibility of a prompt resolution). From the perspective of the joke comprehender, the punch line violates the expected, conventional pattern of gradual (graded) increase in informativeness, and at the same time triggers a *linear shift* from a first unmarked to a second marked interpretation (Giora (1991: 470); Coulson (2000: 33ff); Coulson & Kutas (2001)). As an example, consider (2), analyzed in Giora (1991) and Raskin (1985). The interpretation of ‘taking a bath’ as ‘stealing’ is markedly informative in Giora’s terms, in the sense that it is marginal (back grounded) in comparison to the prototypical constructional idiom interpretation of ‘washing oneself in a bath’. The answer in the punch line *forces a reinterpretation* of the utterance from the prototypical, contextually salient interpretation to the markedly informative one.

(2) “Did you take a bath?” a man asked his friend who had just returned from a resort place.

“No”, his friend replied, “only towels” / “is there one missing?”

(3)(a) You don’t know your right from your left?

(b) *The Comprehensive Lexicon* will teach you whatever you don’t know.

(c) Buy *The Comprehensive Guide for the Political Factions in Israel*.

The second hypothesis introduced by Giora, the *optimal innovation hypothesis*, is situated on a higher, motivational, teleological level. The ‘result’ of optimal innovation is not restricted to humor as a cognitive effect, but extends to pleasure in

⁶ For an interesting discussion on a striking difference between both approaches with respect to the cognitive processing of jokes, see Vaid et al. (2003: 1433ff).

general. Once again, the emphasis is on a balance between innovation (//marked informativeness; incongruity) on the one hand and recoverability (//resolution) on the other. In this respect, the marked informativeness requirement for joke structures is only one possible means of achieving optimal innovation.

Example 3 illustrates Giora's claim. When subjects were asked which of the two alternative answers (3b, 3c) to the question in (3a) they liked best, the majority rated the combination (3a-c) as most pleasurable. On the basis of rating tasks and reading time experiments, it is concluded that pleasurability is situated in "novelty that allows for the recoverability of the familiar" (Giora 2002: 11). The combination of 3a and 3b is considered less pleasurable because it hinges on the salient, familiar interpretation of 2a. 2a-2c, on the contrary, is optimally innovative, because "it invites a less salient, literal interpretation, without dispensing with the salient interpretation" (ibid.). To put it differently, optimal innovation resides in a balance between familiarity and pure novelty.

An important issue that intersects both hypotheses discussed here, and which is compatible once again with script-based theories, is the notion of *saliency*.⁷ Giora (2002: 12) stresses that a *saliency imbalance* is an essential feature of optimal innovation: a linguistic context profiles a salient first meaning while simultaneously suppressing a possible secondary interpretation (the joke interpretation activated after encountering the punch line).⁸ In the resolution process, the saliency imbalance is uncovered and reconsidered in favor of the previously suppressed interpretation. Example (4), discussed in Giora (1997:185), illustrates the play on saliency in joke material. The first few words of the sentence (especially the VP 'to walk into') trigger a salient interpretation for the highly polysemous/semantically ambiguous word *bar*,

⁷ Saliency of a word or utterance is defined in Giora (1997: 185) as „a function of its conventionality (e.g. Gibbs 1980), familiarity (e.g. Blasko and Connine 1993), frequency (e.g. Hogaboam and Perfetti 1975; Neill, Hilliard, and Cooper 1988), or givenness status in a certain (linguistic and non-linguistic) context" (see also Giora 2003: 15ff). Further work on saliency phenomena in ironic, sarcastic, and non-literal language use in general can be found in Giora (1997, 1999, 2001, 2003), Giora & Fein (1999a, 1999b), and Attardo (2001b).

Attardo (2001a: 19) refers to saliency phenomena in relation to scripts: "Scripts come with a default, unmarked foregrounded subset of elements (cf. Langacker 1991: 226ff). The human perceptual-processing system seems hardwired into considering certain types of stimuli more salient than others. Gestalt psychology and more recently cognitive linguistics has pointed out a number of criteria that predetermine saliency/foregrounding. [...] Hence an element of a script is a more normal (unmarked) figure if is cognitively salient".

⁸ Cf. Giora (2002:15): "The structure of most jokes is such that it keeps us attending to the salient response until the punch line point where a reversal is enforced allowing for the recognition of the novel. The pleasure derivable from this joke hinges on recognizing the innovative in the salient". For an overview of saliency issues in jokes, see Giora (ib.: 14ff).

viz. 'a pub'. However, the punch line forces a reinterpretation via a suppressed, non-salient alternative meaning, viz. 'board'. Thus, the salience imbalance between the contextually salient interpretation and intended, non-salient joke interpretation accounts for the humorous effect of the punch line.

(4) Two men walk into a bar, and a third man ducks.

To conclude this brief overview of, broadly defined, cognitive linguistic humor research, we stress once more that these are valuable, if not essential foundations for a cognitive linguistic (in a strict sense) treatment of humor phenomena. This, however, is not to say that the existing accounts cover the entire area and all of its specifics. On the contrary, the insights provided by these theorists generate a broad range of new and older, insufficiently addressed research questions.⁹ The following section (2.2) is intended as an overview of these questions, with a special focus on those issues for which a cognitive linguistic account can provide (partial) solutions.

2.2 Research perspectives for cognitive linguistics: Bridging the gap

Contributions to humor research within a cognitive linguistic framework, in our opinion, can deal with two interrelated, only marginally explored issues, one concerned with the procedure and boundaries of linguistic analyses, the other with specific issues of cognitive and linguistic construal. Needless to say, the present account cannot systematically deal with all of these research perspectives. As a result, we will limit ourselves to the listing of a range of compelling questions for both linguists and humor researchers. The rest of the paper will explore one such question in more detail.

2.2.1 Rejection of modularity

A first consideration concerns one of the most central assumptions of the cognitive linguistic paradigm. Language, on this view, is not an independent (innate)

⁹ Attardo (2001a: 207f;) and Attardo et al. (2002: 39-41) list some of the unexplored or insufficiently unraveled issues in linguistic humor research.

competence but is rather part and parcel of a network of interconnected cognitive abilities, such as conceptual reasoning, visual and non-visual perception, mental simulation, bodily orientation, etc. This *rejection of a modular approach* to language and linguistics has repercussions on linguistic analysis in general (e.g. in the rejection of the formal-linguistic tripartite structure of syntax-semantics-pragmatics), but maybe most profound on accounts of highly creative language use.¹⁰ The consequences of this more dynamic approach for linguistic humor analysis are pinpointed by Veale (ms): “[I]n this rejection of modularity lies great descriptive power: a theory of linguistic humour can draw upon every such facet with ease, crossing functional boundaries as needed and allowing the interpretation and generation processes to view each component of meaning (lexical, semantic and pragmatic) as re-entrant and available at every level of linguistic analysis”. Although the GTVH extends the purely semantic approach of SSTH by incorporating a number of (interacting) knowledge resources (2.1.1) that must be tapped into, the interaction between the different levels of linguistic and cognitive processing remains largely unaccounted for. Rather, the different KRs are viewed as hierarchically structured, with the higher parameters imposing restrictions on the lower ones (Attardo & Raskin 1991).¹¹ Veale (ms) explores examples of humorous language that illustrate that knowledge resources cannot be dealt with independently but rather in tight interaction at all levels of the humor interpretation process.¹² In conclusion to this first issue then, we argue (along with Veale and Bergen & Binsted) that a cognitive linguistic approach can do justice to the complex nexus of different levels (qualitative and quantitative) in interaction, the embedding of knowledge resources, etc. In other words, by adopting such a dynamic, multidimensional approach, humor research can

¹⁰ Compare in this respect Bergen & Binsted’s argument on *full creativity*: “Investigating language in its most creative form allows us to explore the pinnacle of the human creative potential, which after all is one of our defining cognitive characteristics. Moreover, the study of fully creative language use allows us to investigate the point where structured, cognitive, and social aspects of language are united” (submitted, 12).

¹¹ Cf. Attardo (2001a: 27): “Parameters determine the parameters below themselves and are determined by those above themselves. “Determination” is to be intended as limiting or reducing the options available for the instantiation of the parameter”. The hierarchical organization Attardo & Raskin (1991) propose (tested in Ruch et al. 1993) is structured as follows (from high to low): SO → LM → SI → TA → NS → LA.

¹² “[W]e cannot assume that linguistic knowledge is a resource that is used solely in arriving at the logical form of a humorous utterance or narrative, only to be discarded in favor of wholly logical and conceptual reasoning mechanisms from that level onward. Rather, metaphors and metonymies may need to be accommodated explicitly in the logical form, while the logical mechanism may need to use explicitly metaphoric and metonymic forms of inference to deal with them adequately” (Veale, ms).

come closer to a cognitively adequate approach of the IR process (next to the (semi-) formal approach of the SSTH and GTVH).

2.2.2 Construal

A second perspective for cognitive linguists, one that ties in with the previous argument, is the exploration of the specifics of (cognitive) *construal* in humorous texts. Construal is one of the most essential conceptions in cognitive linguistics. It runs counter to the classic (formalist) belief that there is a one-to-one mapping of external world and linguistic structure. Dynamic semantic theories, in contrast, argue that “situations can be ‘construed’ in different ways and [...] different ways of encoding a situation constitute different conceptualizations” (Lee 2001: 2). Bearing in mind the cognitive linguistic view on language as a recipe for constructing meaning, a recipe which relies on a lot of independent cognitive activity (Saeed 1996: 319), the notion of conceptualization processes is of central importance.¹³ Although construal phenomena are active on all levels of linguistic (and conceptual) organization, we will only single out those that are of direct relevance to an account of humorous creativity. Croft & Cruse (in press, chapter 3) present a good overview of the vast literature on construal and propose an alternative, more encompassing (in comparison to Talmy (2000) and Langacker (1987, 1991)) typology of different construal operations. In table 2, representing Croft & Cruse’s typology, those operations we think deserve special attention in cognitive linguistic humor research, are printed in bold.¹⁴ This, however, is not to say that the study of other mechanisms could not return fascinating dividends for humor research as well as linguistics in general (the selection was partly motivated by the contributions to the theme session at the ICLC 2003).

¹³ Croft & Cruse (in press, chapter 3): “In fact, in cognitive linguistics conceptualization is the fundamental semantic phenomenon; whether alternative construals give rise to differences in truth conditions or not is a derivative semantic fact”.

¹⁴ For a general discussion of the scope of the different operations, see Croft & Wood (2000) and Croft & Cruse (in press, chapter 3).

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- I. **Attention/Salience**
 - A. **Selection**
 - 1. **Profiling**
 - 2. **Metonymy**
 - B. Scope (Dominion)
 - 1. Scope of predication
 - 2. Search domains
 - 3. Accessibility
 - C. Scalar Adjustment
 - 1. Quantitative (Abstraction)
 - 2. Qualitative (Schematization)
 - D. Dynamic
 - 1. Fictive Motion
 - 2. Summary/Sequential Scanning
 - II. **Judgement/Comparison** (including identity image schemas)
 - A. Categorization (Framing)
 - B. **Metaphor**
 - C. **Figure/Ground**
 - III. Perspective/Situatedness
 - A. **Viewpoint**
 - 1. Vantage Point
 - 2. Orientation
 - B. Deixis
 - 1. Spatiotemporal (including spatial image schemas)
 - 2. Epistemic (Common Ground)
 - 3. Empathy
 - C. Subjectivity/Objectivity
 - IV. Constitution/Gestalt (including most other image schemas)
 - A. Structural Schematization
 - 1. Individuation (Boundedness, Unity/Multiplicity, etc.)
 - 2. Topological/Geometric Schematization (Container, etc.)
 - 3. Scale
 - B. Force Dynamics
 - C. Relationality (Entity/Interconnection)
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Table 2: Croft & Cruse's typology of linguistic construal operations

The first category of construal mechanisms, revolving around the central notions of *attention* and *salience*, has been touched upon in the discussion on salience and salience imbalances in humor (2.1.2). What are the exact (con)textual factors establishing the essential opposition in salience between the primary (salient) and intended (non-salient) joke interpretation? Giora's pioneer work on the salience driven mind is still in serious need of additional descriptive and experimental support. One possible means of doing so is the analysis of different instantiations of this more schematic conceptual process. *Selection*, for example, is the ability to focus on those parts of our (linguistic) input that are considered relevant for the purpose at hand and

the possibility to simultaneously suppress those parts that are deemed irrelevant. Specific cognitive mechanisms that serve as means to achieve the goal of selection are *profiling* and *metonymy*. Profiling (cf. 2.1.2, note 7), in frame-semantic terms, refers to the highlighting of specific concepts in a frame. For example, both words *write* and *writer* activate the frame of written communication, but *write* profiles the process part of the frame, whereas *writer* highlights the agentive aspect. The play on profiled and deliberately suppressed aspects of frames seems to be of central importance in the humor game, but unfortunately, these issues remain largely unnoticed (see section 3 for some tentative hypotheses).¹⁵ Metonymy in a cognitive linguistic approach is generally viewed as a cognitive mechanism enabling the selection of a salient reference point in a frame to refer to a different concept in the same frame or to the frame as a whole. In a sentence like *The ham sandwich is waiting for his check* (Nunberg 1979), the ‘ham sandwich’ serves as a contextually salient reference point to refer to a customer in a RESTAURANT frame (thus shifting the profile of the NP ‘ham sandwich’ from PRODUCT to CUSTOMER).¹⁶ The present paper explores the functionality of metonymy (in a broader sense, as proposed by Gibbs 1999) as (part of) a cognitive resolution mechanism in humor interpretation (3.2.). The basic claim is that cartoons and other types of humor deliberately make use of distorted reference-point structures for the purpose of achieving a balanced processing difficulty.

The *judgement* and *comparison* category of construal operation, one of the most basic cognitive operations (Langacker 1987: 103-105), is obviously of central importance to any cognitive linguistic approach to humor. More specifically, the study of the exploitation of framing, metaphoric reasoning, conceptual integration and figure-ground patterns may yield valuable new insights.

One of the most widely discussed construal phenomena in cognitive linguistics is beyond any doubt *conceptual metaphor*. Lakoff & Johnson’s (1980) seminal book has inspired an ever-growing amount of research into the specifics of metaphoric conceptualization and structure-mapping in general.¹⁷ Metaphor can be considered a construal phenomenon since the choice of a particular source domain for

¹⁵ Attardo et al. (2002: 40) seem to address a related question: “Is the distinction between focal and background incongruities useful? How can it be defined more effectively? This seems a central issue for incongruity theory”.

¹⁶ In other words, salience in a frame is the driving force behind the metonymic transfer (Nunberg 1995; Croft & Cruse, in press).

the conceptualization of a target inherently *construes* the target in a specific fashion.¹⁸ In stark contrast to the central attention given to metaphor in cognitive linguistics is the near absence of systematic work on the interaction between conceptual metaphor and humor. Apart from a number of studies dealing with the potentially humorous ambiguity of a literal vs. figurative reading of a metaphorical expression (Alexander 1997; Attardo 1994), the theoretically interesting boundaries between humor and metaphor have only been explored very recently (Pollio 1996; Kyratzis 2003), mirroring to some extent the *bisociation* idea proposed by Koestler (1964). Kyratzis argues that humorous bisociation differs from metaphorical conceptualization in the profiling of the domain boundaries: whereas metaphors essentially focus on the inter-domain connections, suppressing the obvious domain boundaries, humorous stimuli (un)intentionally emphasize the dissimilarities between domains.

On a different level, Attardo et al. (2002) provide a formal account of how structure *mapping* (presented in graph theoretical terms) can be considered the central ingredient of most (if not all) resolution mechanisms in humor interpretation (see 2.1.1). Aligning structure in fundamentally opposed scripts through the use of conceptual mappings is regarded as the cornerstone of incongruity resolution: “[A] mapping LM establishes a (non-necessarily factual) similarity between two scripts, based on a relationship (a mapping function) between elements belonging to two scripts” (ib.: 29). Despite the promising perspective this account offers, still a lot of research is needed into the specifics of these mapping patterns (typology, constraints, etc.). Cognitive linguistics has given center stage to cognitive mechanisms involving conceptual mappings (Lakoff & Johnson 1980; Lakoff 1987; Gibbs 1994; Fauconnier 1997; Coulson 2000; etc.), and can possibly provide a more fine-grained analysis of some of these mapping functions.

Tightly connected to the notions of metaphor and structure mapping (but not adopted in Croft & Cruse’s typology) are integrated conceptualizations as humor elicitors. Recently, cognitive linguistic research has uncovered a basic cognitive process, labeled *blending* or *conceptual integration*, in which structure from two or more different *mental spaces* (*infra*) is brought together in an independent blended

¹⁷ For an up-to-date overview of cognitive metaphor research, see Kövecses (2002), Dirven & Pörings (2002), Giora (2003), Barcelona (2000), Croft & Cruse (in press, chapter 8), among others.

¹⁸ Croft & Cruse (in press, 8-1): “[M]etaphorical meaning is not, at least in basic functional respects, a special kind of meaning, it is rather the case that metaphor is the result of a special process for arriving at, or construing a meaning”.

space, which dynamically creates a semantic structure of its own (Fauconnier & Turner 1994, 1996, 1998, 2000, 2002; Coulson 2000).¹⁹ That humor in some cases results from the blending of different frames is not, of course, a new insight from cognitive linguistics. A pre-theoretical resp. restricted notion of blending in humor was introduced by Koestler (1964) and Hofstadter & Gabora (1989). The former vaguely describes his perception of blending in humor as the “sudden bisociation of an idea or event with two habitually incompatible matrices” (1964: 51), whereas the latter analyze a subtype of humor involving slippages and label it *frame-blending*. Although Hofstadter & Gabora (1989) do not recognize blending as a central human cognitive ability underlying – apart from humor – grammar, counterfactual reasoning, scientific invention, etc., they do introduce some of the notions that were very influential in the development of blending theory (Fauconnier & Turner 2002: 59).

Within the framework of blending theory, especially Coulson (2000, in press) has drawn attention to the fact that blending is one of the sets of processes underlying humor. Feyaerts & Brône (2002, 2003) deal with a specific integrated network constellation they label *double grounding*, in which the simultaneous activation of a salient metaphorical interpretation of a lexical item with a metonymically driven literal interpretation yields an effect of wit. Although there is a gradual increase in research on conceptual blending in humor (Coulson, submitted; Hünig 2002; Bergen, submitted; Kyratzis 2003; Lundmark 2003; Marín-Arrese 2002; Kalmykova 2003; Fauconnier & Turner 2002), further research is needed into the specifics and types of humorous blending in contrast to non-humorous integrations (e.g. the relation between dynamic meaning construction through blending and optimal innovation as stipulated by Giora 2002).²⁰

The last category of judgement/comparison construals listed by Croft & Cruse, the notion of figure and ground, is not entirely new to humor research. The figure-ground distinction was introduced into linguistics by Talmy (1975; 2000), who incorporated the notion from Gestalt psychology. The distinction can best be illustrated by the use of an expression of spatial orientation. In a sentence like *The book is on the shelf*, the figure (*book*) is spatially oriented relative to the ground

¹⁹ Croft & Cruse (in press) do, however, discuss blending theory in a larger chapter on metaphor (chapter 8).

²⁰ For a more comprehensive overview of research on humorous blending, see Coulson (submitted).

(*shelf*).²¹ Although humor research has recorded the exploitation of figure-ground alignment through figure-ground reversals (Attardo & Raskin (1991: 295), Attardo et al. (2002: 5ff)), they do so from the Gestalt psychological account. Bearing in mind the uncovering in cognitive linguistics of figure-ground configurations in grammar (and language in general), new questions emerge on how these patterns are exploited for humorous purposes.

To conclude the list of possible cues for cognitive linguistic research into construal aspects of humor, the linguistic interest in *viewpoint* phenomena needs to be situated. In a construal-based framework, adopting a different perspective automatically entails a different conceptualization. Many analyses, especially accounts of spatiotemporal orientation, have focused on the repercussions of different viewpoints on conceptualization (Langacker 1987: 122ff; Levinson 2003; Croft & Cruse 39ff). Of particular interest in the present account is the treatment of viewpoint in *mental spaces theory* (Henceforth MST; Fauconnier 1985[1994], 1997; Fauconnier & Sweetser 1996). The theory of mental spaces has been introduced to linguistics and cognitive science to coherently deal with a wide range of problematic semantic phenomena, such as indirect reference, pragmatic functions (Nunberg 1979), referential opacity, (counterfactual) conditionals, compositionality, etc.²² Mental spaces, on Fauconnier's account, are small conceptual structures (small in comparison to conceptual domains) "that proliferate when we think and talk, allowing a fine-grained partitioning of our discourse and knowledge structures" (Fauconnier 1997: 11). On this account, viewpoint is dealt with in terms of different mental spaces: the viewpoint space is the structure from which others are accessed. Within MST, viewpoint related issues have been discussed by Rubba (1996), Sanders & Redeker (1996), Cutrer (1994) and Fauconnier (1997: 49 ff).

Humor research has only very recently touched upon the relevance of mental spaces. Ritchie (2003) argues that the accepted dichotomy between referential and linguistic jokes is not sanctifying, since both create an event which is open to alternative interpretations, albeit by different means. By the same token, the generally accepted view that a reader/hearer of a joke is forced into a reinterpretation from an incorrect to a correct interpretation of a lexical element or grammatical construction,

²¹ Figure-ground effects in discourse can underlie metonymic meaning transfer as well (Koch 1999).

thus performing a frame-shifting operation, does not account for all (or even the majority) of verbal jokes. Ritchie explores a number of jokes that revolve around a misinterpretation by a story character, and proposes an account of viewpoint shifts/reinterpretations in terms of mental spaces. Attardo (2001b) uses a mental space account of *ironical mode adoption*.²³ Mode factive utterances (i.e. utterances allowing mode adoption), such as irony, metaphorical utterances, fiction, etc., trigger the construction of a new mental space (next to the base/reality space) so as to allow the hearer to avoid having to reject the utterance as ill-formed. In accordance with Fauconnier's *presupposition float principle* (1985/1994: 61), it is argued that the construction of e.g. an ironical mental space avoids a clash between the presuppositions of an utterance and those of the speaker and hearer.

With the overview of research perspectives through the central concept of construal, we hope to have shown that a cognitive linguistic approach indeed provides articulate tools for the analysis of the complex, dynamic and creative issues of (verbal) humor generation and interpretation. It will have become clear that a modular approach, separating the linguistic dimension from that of e.g. logical mechanisms is untenable in a cognitive linguistic account. Rather, all levels of linguistic and conceptual processing are inextricably bound.

The rest of this paper is devoted entirely to the partial unraveling of a poorly discussed topic in cognitive and linguistic humor research: the relation between metonymy as a reference-point construction and logical mechanisms as resolution inducing operations. Through the use of an extended definition of metonymy (3.1) in comparison to more traditional accounts, we will functionally connect phenomena that are generally treated as independent parameters (metonymy, inferrability difficulty, causal inferencing, and the role of 'the unsaid' in humor).

²² We cannot go deeper into any of these phenomena in the present account. For more detailed analyses, the reader can refer to Fauconnier (1985, 1997), Fauconnier & Sweetser (1996), Coulson (2000), Lee (2001), Croft & Cruse (in press).

²³ Mode adoption is to be understood as "an acceptance on H's [hearer's] part of a possible world, as defined by S, which differs from W_r , i.e., the world that S and H mutually know as "reality" in some respect. By acceptance, I mean the agreement to operate, at least momentarily, within that possible world" (2001b: 10-11).

3 Metonymy as (part of) a cognitive resolution mechanism

3.1 Metonymy in cognitive linguistics

As mentioned above, the cognitive turn in linguistics has resulted in a reinterpretation of ‘creative’ phenomena like metaphor and metonymy, refuting the classic approach in terms of figures of speech, in favor of a conceptual account. However, in contrast to the ‘celebrity status’ of metaphor (since Lakoff & Johnson 1980), systematic interest in metonymy as a conceptual mechanism has only arisen in the last decade (Gibbs 1994; Feyaerts 1997; Panther & Radden 1999; Barcelona 2000; Dirven & Pörings 2002; Panther & Thornburg, in press). Whereas more traditional cognitive linguistic accounts relegated metonymy to the periphery of cognitive processing as some kind of *parente pauvre* of metaphor (Bredin 1984: 45), this recent research has shown that metonymy is at least as fundamental (or maybe even more basic) cognitive process as metaphor (Riemer 2002). Consider the following definition of metonymy, as proposed by Radden & Kövecses (1999: 21):

“Metonymy is a cognitive process in which one conceptual entity, the vehicle, provides mental access to another conceptual entity, the target, within the same idealized cognitive model”.²⁴

On this view, metonymy is no longer defined as a substitution of one linguistic expression by another, but as a basic conceptual phenomenon that functions within an ICM or *cognitive frame* (Panther & Radden 1999: 9).²⁵ To use the more technical approach proposed by Croft & Cruse (in press, 8-17), metonymy (just as metaphor) involves the use of an expression E with a default construal A to evoke a distinct construal B, where the connection between B and A is inferable by general principles. In metonymic construal, in contrast to metaphor, A and B are associated in a domain or domain matrix (ICM, frame, etc.). It is important to note that this definition in

²⁴ Idealized cognitive models, in Lakoff’s terminology, define people’s structuring of knowledge in cultural or “folk” models (for a discussion on the relation between frames, domains and ICMs, see Radden & Kövecses (1999: 19)). The label ‘idealized’ serves to stress that ICMs “don’t fit actual situations in a one-to-one correspondence but relate many concepts that are inferentially connected to one another in a single conceptual structure that is experientially meaningful as a whole” (Gibbs 1994: 58).

terms of (salient) reference-point constructions does not fully cancel the more traditional analysis in terms of *contiguity* or adjacency.²⁶ In part because of the problematic delineation of concepts such as domains or domain matrices, a contrastive definition of metaphor and metonymy purely on the basis of this criterion is not unproblematic (Feyaerts 2000; Riemer 2002) Therefore, in addition to the perspective of scope (inter- vs. intradomain relation), a translation of the classic notion of contiguity to *conceptual contiguity* seems to be highly advisable, in that it stresses the nature of the relation (contiguity vs. similarity).²⁷

In reply to the question what exactly constitutes the role for contiguity to play in the definition of metonymy (“So do we not associate everything with something and something with everything?”, Koch (1999: 148)), we can refer back to the significance of *salience* in construal (2.2). Prototypically, only salient elements of a category function as the reference point for a metonymic shift. Consider the following example from Gibbs (1999: 66ff), providing evidence for metonymic reasoning in the use of scripts or scenarios in everyday communication:

- (5) A: How did you get to the airport?
 B: I waved down a taxi.

Speaker B wants to inform A that he/she has reached the airport by waving a taxi, making the taxi stop, getting in the car, driving to the airport and getting out again. On the basis of just one short sentence (‘I waved down a taxi’) listener A is able to infer the entire *scenario*. This one subpart of the complex action functions as a referential shortcut to the frame as a whole. Lakoff (1987: 78) labels this ICM ‘Going somewhere in a vehicle’, which consists of the following:

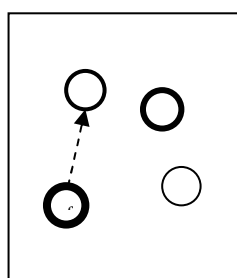
- Precondition: You have (or have access to) the vehicle.
 Embarkation: You get into the vehicle and start it up.
 Center: You drive (row, fly, etc.) to your destination.

²⁵ Panther & Radden (1999: 9) stress that the notion ‘conceptual frame’ is to be understood as a cover term for what is variously called ‘domain’, ‘idealized cognitive model (ICM)’, ‘schema’, ‘scenario’, ‘script’, etc.

²⁶ For a discussion on the applicability and scope of the notion of ‘contiguity’, see Weinrich (1978: 107), Bredin (1984: 47), Koch (1999: 148), Feyaerts (2000).

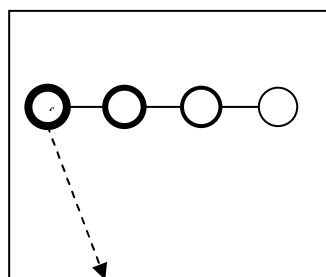
Finish: You park and get out.
 End point: You are at your destination

In normal discourse situations, speakers constantly represent entire scenarios or ICMs by profiling one or more salient aspect(s) of it. In our example (5) above, the speaker uses the precondition ‘having access to a vehicle’ to evoke the rest of the scenario. This does not mean, however, that Precondition is the only access point for metonymic inferences. One can just as well profile other features of the ICM, as e.g. the Embarkation (e.g. *I hopped on a bus*) or Center (e.g. *I drove my car*). Most important is the insight that people can metonymically infer complex frames, scripts, scenarios or ICMs, which are stored in long-term memory, by merely referring to a salient part of that frame (figure 1).



FRAME

Salient reference point to another element in the same frame (e.g. *The ham sandwich is waiting for his check*)



FRAME

Salient reference point to the frame as a whole (e.g. *I waved down a taxi*)

Figure 1

Having arrived at this point, the question arises to what extent the redefined term *metonymy* can still cover the classic notion ‘substitution of names’ and the current interpretation, which includes phenomena which were previously analyzed as inferences and *conversational implicatures* (Grice 1975, 1989).²⁷ Gibbs (1999: 69) argues for a distinction between the **processing of metonymic language**, as in sentences like *We need fresh legs in our team*, where ‘fresh legs’ is to be interpreted

²⁷ Cf. Dirven (1993: 14): “Contiguity cannot be based on any form of objective or ‘natural’ contiguity. This has the far-reaching implication that contiguity must be taken to mean ‘conceptual contiguity’ and that we can have contiguity when we just ‘see’ contiguity between domains”.

²⁸ On adductive inferences as incongruity resolution mechanisms, see also Attardo (2001b: 170f) and Wirth (1997).

metonymically on the basis of a PART-WHOLE relationship, and the **metonymic processing of language**, which covers inferences and conversational implicatures.

Before we turn to the relevance of metonymic reasoning in the interpretation of humor, we will briefly address the topic of the cognitive and/or pragmatic function of metonymy. Why do we use metonymies in thought and language, instead of ‘transparent’ literal language? Langacker (1993: 30) argues that “a well-chosen metonymic expression lets us mention one entity that is salient and *easily coded*, and thereby evoke –essentially automatically– a target that is either of lesser interest or harder to name” [our emphasis, B&F]. Note the kinship to Sperber & Wilson’s principle of relevance: “Every act of ostensive communication communicates a presumption of its own optimal relevance”. (1995: 158). In other words, optimal relevance resides in combining maximal effect with minimum cognitive effort. Consider, once again, the classic example briefly discussed in 2.2.2 (Nunberg 1979):

(6) “The ham sandwich is waiting for his check.”

The sentence in (6) can be uttered by a waiter or waitress in a restaurant to refer to a particular customer. Within the cognitive frame of eating at a RESTAURANT, the food a particular customer has ordered is a very salient characteristic of that customer from the perspective of the waiters and waitresses. So, the salient concept of FOOD can be used as a referential shortcut to the customer (whose name, the primary referential access point for a person, is mostly unknown to the restaurant staff). The fact that using the ordered food as a reference point to the customer also serves to access the particular check the customer is waiting for (control for the waiter/waitress to whom sentence (6) is addressed), contributes to the optimal relevance of the linguistic expression. Metonymic reference in this context yields maximal contextual effects with minimal processing effort, as formulated in the principle of relevance.

3.2 Metonymic construal and incongruity resolution

As pointed out by Attardo (1994: 39), humor “should provide some, but not too much ‘difficulty’. More precisely, a joke should present some cognitive challenge without, however, being too complex to process”. This stipulation is elaborated in cognitive terms in Giora’s (1990) *marked informativeness requirement* as well as in her *Optimal Innovation Hypothesis* (2.1.2). Applying both principles results in a *balanced processing difficulty* (‘balanced’ because resolution is still required), which not only applies to jokes, but to other types of IR-humor as well. Next to the cognitive cost of humor resting on a mechanism of frame-shifting (Coulson & Kutas 2001), there are other types of IR humor, in which the reader has to perform a cognitive process of problem solving, in which a frame or scenario evoked by one or more (non-)salient aspect(s) has to be completed.

In this section, we will focus our attention on some occurrences of this balanced processing difficulty with respect to a single construal mechanism, viz. metonymy. In drawing on examples like cartoons and expressive insulting,²⁹ it will be argued that in a number of IR-based humor types, metonymic reasoning as an *unpacking device* is essential in establishing (partial) resolution of the incongruity. More specifically, this empirical analysis envisages a description of metonymically grounded construal operations as they are applied in humorous discourse in order to complicate the prototypical reference-point relationship. In our attempt to provide a structural account of the ways in which prototypical metonymy is affected by these complicating factors, we relate our analysis to the image-schematic value of metonymy as a prominent reference-point phenomenon.

In his account of reference-point constructions, Langacker (1993) emphasizes both the ubiquity and schematicity of reference-point organization, thus characterizing it as a fundamental cognitive ability,³⁰ through which different types of reasoning at all levels of categorization are structured. Basically, reference-point (RP) reasoning consists of focussing on a salient, easily coded element (the reference point)

²⁹ The corpus on which the analysis is based consists of 100 one-panel cartoons by the German cartoonist Martin Perscheid, (covering a four-month period of ‘daily Perscheid’ cartoons distributed via mailing lists), and a collection of several hundreds of German humorous insults (*Fertigmachsprüche*), stereotypically aiming at a negatively valued characteristic (e.g. stupidity, ugliness, etc.) in a highly expressive way.

in order to establish mental access to another, less salient conceptual entity (the target), which is generally harder to code. This target is confined to an abstract conceptual structure, called the *dominion*, which can be defined as “the conceptual region (or the set of entities) to which a particular reference point affords direct access (i.e. the class of potential targets)” (Langacker (1993: 6). As the relevance of RP-reasoning for the interpretation of IR based humor resides in its “dynamic exploitation of asymmetrically prominent entities (...)” (ib.: 36), the question arises, then, to what extent RP organization in humorous examples features any striking characteristics allowing a categorization of IR based humor in terms of *marked reference-point structures*.³¹

This empirical part comprises a description of four major types of marked reference-point structures that can be identified in the material. In this order we will focus on cases of metonymic chaining in verbal expressions (3.2.1), non-salient reference points in cartoons (3.2.2), compression (3.2.3) and absurd causal logic (3.2.4). This distinction is partly motivated by our analytical purposes and is by no means to be considered an exhaustive nor absolute one: our database is too small to make any legitimate claim about the broader typological status of the structures presented here. Furthermore, the distinction of four structures should not lead to conclude that these types represent isolated categories: some examples clearly involve an interaction of different RP structures. Yet, we do believe that the identification of these four types of marked metonymic reasoning may prove to be stimulating in the search for further patterns of construal in humor.

3.2.1 Metonymic chaining in verbal expressions

As a first illustration of the way in which metonymic reasoning is required in order to provide an adequate interpretation (resolution) of a non-prototypical scene (incongruity), some instances of German stupidity expressions are analyzed. Since expressions like these are used to describe a person as “having a great deal of some

³⁰ More specifically, Langacker (1993) categorizes RP-reasoning as an “image-schematic ability”.

³¹ In our attempt to systematize the cognitive mechanisms operational in the incongruity resolution process, we side with Attardo et al. (2002), who aim at an encompassing taxonomy of logical mechanisms. From a cognitive linguistic point of view, we try to provide an integrated (non-modular) account for these mechanisms taking the general cognitive ability of *construal* as the unifying notion of description.

property” (Bergen & Binsted, submitted), they can be categorized as instances of *scalar humor* (ib.). In their most elaborate form, these insults consist of two clauses: the first one serves to predicate a particular (negatively valued) property of a person, whereas the second clause is used to illustrate or legitimate the value judgement. This central type can be represented as a construction of the type ‘X is so Y that Z’ (see also example 7).³² For the present purposes, however, we will focus our attention on a number of conceptually related, (constructionally less outspoken) examples, in which the target concept (STUPID) is not profiled (see 8-14). Instead, these expressions refer to the target property (STUPID) by focussing on aspects, which are situated on a causally structured chain of events. This metonymic construal mechanism appears to be very productive in domains of high expressivity. As a matter of fact, people are very creative in expressing a negative appreciation of others. Importantly in cases like these, the onomasiological question of selecting an appropriate linguistic expression is not just determined by a general communication principle of being referentially accurate, but also by the need to do this in a non-routine, expressive way (see Feyaerts & Brône, in preparation). Applying both communication principles leads to a constant renewal (modification, creation) of the linguistic material in a specific domain. What makes examples like these particularly interesting, is the observation that in humorous-expressive contexts, a target concept tends to be hidden in an always changing manner, so that in the end, an impressive network of lexical variation – including a majority of non-conventional expressions – emerges. Taking a closer look at just a few examples for the concept ‘X is stupid’ may suffice to gain better insights into the way in which Optimal Innovation (Giora) is operated as a dynamic construal mechanism.

In characterizing metonymy as a prominent reference-point structure, Langacker (1993) points out the achievement of reconciling two cognitive functions: referring to the target concept through a combination of maximal accuracy with minimal cognitive effort. Only by selecting experientially salient features as reference points, this last requirement can be met. Cases of IR-based humor, however, are deliberately construed in function of a *balanced processing difficulty*, involving ‘non-salient’ reference points as the operational basis for metonymy as a scenario or frame unpacking device.

³² Bergen & Binsted restrict their analysis of scalar humor to examples of this constructional type.

As documented elsewhere (Feyaerts 1997) the conceptualization of the value judgement ('X is stupid') in German concentrates around the imagery of some 'abnormality of the head' (of its 'content' to be more precise). This pattern elaborates a schematic metonymic pattern, according to which mental deviances are represented as physical deviances, as illustrated in (8).

(7) Er ist so dumm, dass ihn die Schafe beißen

He is so stupid that he gets bitten by sheep

(8) Er hat nichts / Wasser im Kopf

He has nothing / water inside his head

Interestingly, this primary, metonymically motivated structure is itself subject to metonymic processing, in that a lot of expressions refer to stupidity by profiling, for instance, the cause or effect of the primary source concept PHYSICAL DEVIANCE. In (9), the lack of qualitative substance inside the head is metonymically structured by the comparison of a person's head with a sieve. A similar way to achieve this is illustrated in (10), where a person's intellectual weakness is expressed in terms of the deviant size of his/her head, comparing it to the bigger heads of horses. In (11) the schematic concept DAMAGED CONTAINER (head) is itself subject to an additional metonymic construal: the image of a damaged head (hence, a damaged content of the head and therefore a stupid person) is represented by profiling a 'violent contact' as its (possible) cause. Although these examples may count among the more or less conventionalized expressions for stupidity in German, other examples (like (12)) definitely are not commonly used in the linguistic community. What is at stake here, is the particular action people with thick skulls might lend themselves to: they serve as a battering-ram. This expression relates to the target 'X is stupid' by the imagery of a skull that is so thick that it hardly leaves room for its valuable content (or for the entrance of valuable ideas).

(9) Sie hat einen Kopf wie ein Sieb

She has a head like a sieve

(10) Überlass das Denken den Pferden, die haben einen größeren Kopf

Leave the thinking to the horses, they have bigger heads

(11) Du hast wohl als Kind einen Schlag auf den Kopf bekommen ?

As a child you must have had a blow on your head

(12) Mit ihm kann man Türen einrennen

You can break down doors with him

For the present purpose, it is important to note that many of these creative, metonymically structured expressions are situated at quite a conceptual distance from the intended target. This is to say that, as an expression such as (11) is created, the target concept can only be reached through the activation of an additional metonymy: linking the image of hitting somebody on the head with ‘being stupid’ presupposes the activation of an intermediate causal link, according to which damaging the container implies damaging the content as well, which in turn stands for a ‘damaged’ cognitive ability (seen as the ‘product’ of the human brain). This construal of ‘*metonymic chaining*’ can be represented as in figure 2; the arrows stand for metonymic relations, the circles for conceptual entities (not used in a technical sense). The asterisk symbolizes the negative value ‘deviant’, the letter T inside a circle identifies the target structure, and increased boldness represents the profiled structure (conceptual location of the linguistic source structure).

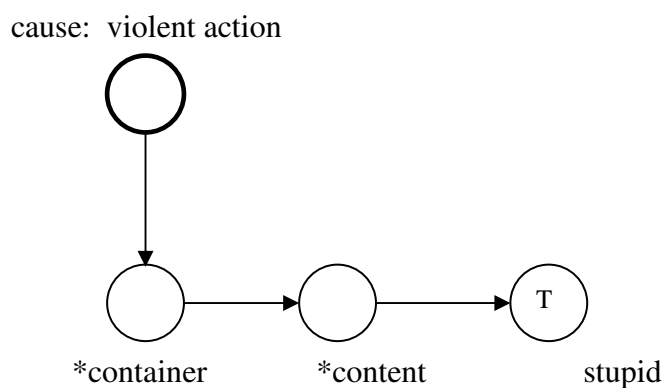


figure 2

The same goes for (12): stupidity is structured as caused by a brain which is too small, which in its turn is conceptualized as the consequence of a skull, which is too thick (deviant container). Both metonymic extensions, to be sure, are not profiled: they

need to be activated in order to link the image of the action in (12) to the target concept ('T'). The metonymic chaining pattern underlying this expression can be represented as in figure 3. Comparing these two structures, it appears that in both cases the target is profiled from a peripheral spot on a causal event structure, thus implying a mental scanning operation alongside 'intermediate' conceptual entities. In terms of reference-point structures, the selected source concepts serve as 'marked' reference points (see also 2.3.2), requiring additional metonymic processing in order to access the intended target.

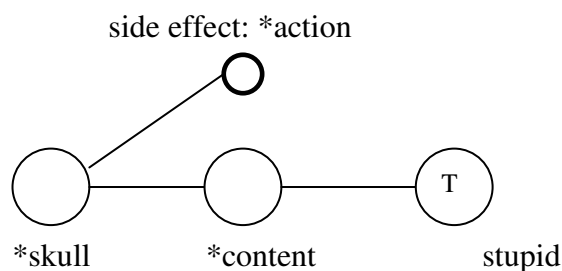


figure 3

It is crucial to note at this point in the analysis that due to conventionalization, high frequency or other factors leading to enhanced salience, there might exist an 'interpretational short cut' between the source and target structure of expressions like these. It seems to be the case, as well, that creating novel expressions by stretching the conceptual distance between source and target can only succeed if the intermediate structures which are omitted from the (causal) chain of events possess a specific degree of conventionalization (salience). It would be interesting to investigate on an experimental basis the metonymic flexibility with regard to non-conventional material.³³ For the present purpose, it suffices to point out the structural characteristic of this IR-type of expressions as exploiting the conceptual distance between source and target.

³³ This links up with the discussion launched by Brigitte Nerlich (26/08/2002) at the Figurative Language Network concerning the example where someone seeing her solar-powered fountain at work says to somebody else over the phone: 'listen to the sunshine!' (holding the phone towards the fountain).

In the examples mentioned above, the complex relationship leading up to the target constitutes a metonymic chain. As illustrated in (13) and (14) such a chain can be complicated by an additional metaphor as well.

(13) Ihm haben sie wohl eine Ecke abgefahren?

Someone must have cut off one of his edges

(14) Bei dir haben sie wohl eingebrochen?

You must have had a break-in, right?

In these examples, stupidity is profiled through the image of a damaged container, which in these cases corresponds to the human body conventionally metaphorized as a building. Since this is another illustration of how the conceptual distance between source and target may be construed, we will not pursue the analysis any further in the context of the present paper.

3.2.2 Non-salient reference-point structures in cartoons

A second category of marked reference points in the construal of humorous ‘texts’ is the exploitation of non-salient retrieval cues as instigators of the incongruity resolution mechanism. As this is a striking characteristic of – among others – one-panel cartoons, this section will explore two examples from the cartoon database that support this claim.

3.2.2.1 Seeing is knowing...

The one-panel cartoon in figure 4 shows a minimalist scene with an electric saw, a pair of glasses broken exactly in the middle and an ambulance driving away from the scene. At first sight, the depicted elements seem to lack cohesion and may therefore pose an initial interpretation difficulty. The caption, however, offers a crucial key to metonymically evoke a meaningful scenario: the word *kurzsichtig* (literally: ‘near-sighted’, figuratively: ‘stupid’) suffices as a linguistic anchor (RP) to secure the

cartoon's referential meaning.³⁴ Apparently, the broken glasses on both sides of the saw belong(ed) to a person, who got injured because of his or her near-sightedness and, hence, stupidity. To put it in more technical terms: the broken glasses, the word *kurzsichtig* and the ambulance driving away serve as RPs to metonymically trigger the ACCIDENT scenario.

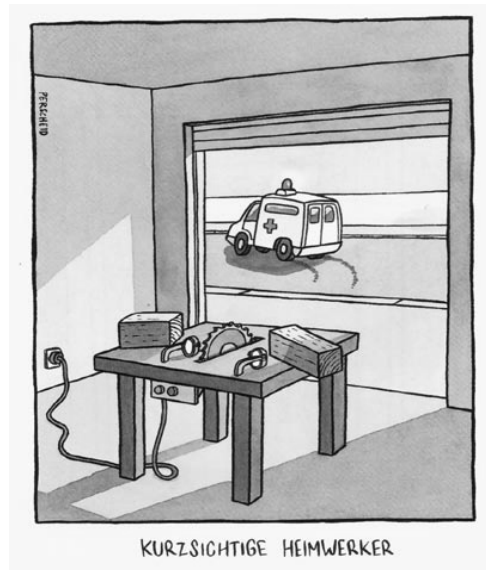


Figure 4

The account above raises the question why the cartoon realizes a humorous effect. Why is it that, by contrast, in the example of *waving down a taxi* mentioned in 3.1, in which only one aspect is used as a reference point to evoke the entire travel scenario, no humorous effect is achieved? The difference, we argue, is situated on two levels. First, there is the absurdity of a person cutting his or her head because (s)he is so near-sighted (stupid) that (s)he came too close to the saw. So, despite the partial resolution of what at first sight appears as a rather incongruous image, the incongruity remains in the absurd scenario. This absurdity is of course absent in the taxi example. Second, from a cognitive point of view, there is a striking structural difference to be noted. In normal, non-humorous discourse, speakers tend to metonymically conceptualize a target referent by means of a *salient* aspect of the scenario or frame. Waving down a

³⁴ It should be stressed that this does not count in absolute terms (a fundamental problem in humor research). Some readers/viewers might not even need the caption to resolve the apparent incongruity.

taxi in order to make it stop, get in, drive to your destination etc. is a highly salient aspect (precondition) of the travel scenario. In much the same way, the food ordered by a customer ('ham sandwich') in the restaurant frame is extremely salient in that particular context, and can thus function as an access point for metonymic reference. In examples like these, the selection of salient reference points allows metonymy to occur in its prototypical function, in which two basic cognitive abilities, maximal referential accuracy and minimal cognitive effort, are successfully reconciled.

As to the cartoon in figure 4, however, the entire setup is less straightforward, not allowing an automatic processing of the intended meaning. A complicating aspect, pertaining to the cartoon medium as such, concerns the combined presentation of more than just one reference point, not all of which contribute in an equal way to the overall interpretation. Keeping in mind the major cognitive-communicative principle of referential accuracy, it appears that in any cartoon at least one of its components is sufficiently salient to guarantee an adequate interpretation of the depicted scene. In this case, both the caption ('kurzsichtig') and the ambulance fulfill this criterion as they express both a prominent effect and cause of the envisaged accident. With regard to the depiction of an ambulance driving away, it is interesting to note that on a causal chain of events, this action is situated somewhere at the periphery of the event structure, as an x^{th} -degree effect of the accident (central event). Just like with the verbal expressions discussed in 3.2.1, activating the scenario from such a peripheral access point presupposes a mental scanning operation (*metonymic chaining*) along intermediate stages (in this case the previous effects) of the event left implicit: immediate physical effects of the accident, evaluation of the seriousness of the injuries, calling an ambulance, arrival of the ambulance etc. Crucially, however, as it appears that the ambulance provides quite a prominent reference point, increased conceptual distance does not always seem to imply weaker salience.

As for the pair of glasses, it represents in two respects a degree of markedness of the constellation. First, although these broken glasses profile a direct consequence of the accident, compared to the physical injuries they can hardly be considered more than just a minor side effect. Interestingly, the glasses do not merely instantiate an effect of the accident; they also indicate in an indirect way – a metonymy on its own – the cause of the accident. In other words, the 'real' cause of the accident, myopia, is metonymically structured by the depiction of the (broken)

pair of glasses as one of its (tragic) manifestations. So, although the broken glasses do relate to both the primary cause and effect of the central event (the accident itself), they only do so in an indirect way as they represent a rather ‘accidental’ manifestation of both causal aspects. This non-salient status of both aspects is represented in figure 5 by the small circles situated at the periphery of the central chain of events.³⁵

A second striking structural feature of the broken glasses is the observation that they are depicted as an isolated effect of what must have been a terrible accident. Remarkably, there is no sign of highly salient effects such as blood or the victim itself. This observation relates to the question of *the unsaid* in humor. Looking more closely at the specific application of construal mechanisms such as metonymy in humor, one might gain some new insights into this poorly addressed question in humor research (Dolitsky 1992; Attardo 1994: 289; Attardo et al. 2002: 40-41). On this point, humor research offers an interesting additional perspective on the issue of construal mechanisms as they are discussed in cognitive linguistics. Although typological descriptions of construal operations (Langacker 1987; Talmy 2000; Croft & Cruse, in press) recognize the crucial difference between aspects of experience being situated in- or outside the (immediate) focus of attention (compare a wide range of experience organizing categories such as figure – ground, foreground – background, profile – base, trajectory – landmark etc.), most cognitive linguistic approaches tend to address this difference from a unilateral perspective: aspects of experience which are not selected into the focus of attention (profile) simply ‘remain’ in the base. In looking at humor as a *non-bona fide mode of communication* (NBF³⁶, Raskin 1985), this characterization of aspects left out of a humorous ‘text’ proves to be far too passive, as it does not fully account for a specific humorous strategy of *suppressing* salient elements in a frame or scenario. In our example, the cartoonist deliberately left out the most salient effects of the ACCIDENT scenario, thus creating some sort of ‘profile gap’, which provides an additional non-salient reference point

³⁵ With regard to the merging of two functions (cause and effect) in a single element, see 3.2.3 on compression.

³⁶ According to Grice’s maxims, humorous communication should be nonsensical, because the CP is violated. However, one has to ask the question, as Attardo (1994: 275) does: “How is it possible then that speakers do successfully engage in communicative practices that involve humorous exchanges?” Indeed, the joke teller does seem to get a message across, in that his or her utterance is recognized and understood as a joke. As a solution to this apparent paradox, Raskin (1985) argues that joke hearers/readers will adopt a different cooperative principle, the NBF mode of humor, as soon as they realize they have been misled (or even from the start, if the humorous text is announced as such, e.g. by phrases like *Do you know the one about...*, etc.).

with regard to the processing of the cartoon as a whole. Although these salient effects are left in the background, thus rendering them less salient, they still contribute to the construal of the overall accident scenario.

Looking at the cartoon as a whole, it appears that in contrast to prototypical metonymic reasoning, the reader of this particular cartoon (and by extension of many other cartoons) has to metonymically process the image on the basis of both *salient and non-salient* aspects of a scenario. As for the construal of marked reference-point structures, basically the same observations hold as for the expressions of verbal insult. Although some retrieval cues secure an accurate referential meaning, the profiling of non-salient RPs in combination with the suppression of salient RPs requires an additional cognitive effort. The schema in figure 5 represents the event structure evoked by the cartoon in figure 4. Bold appearance stands for profiling, whereas dashed circles represent profile gaps; small circles indicate the peripheral location of a profiled conceptual structure.

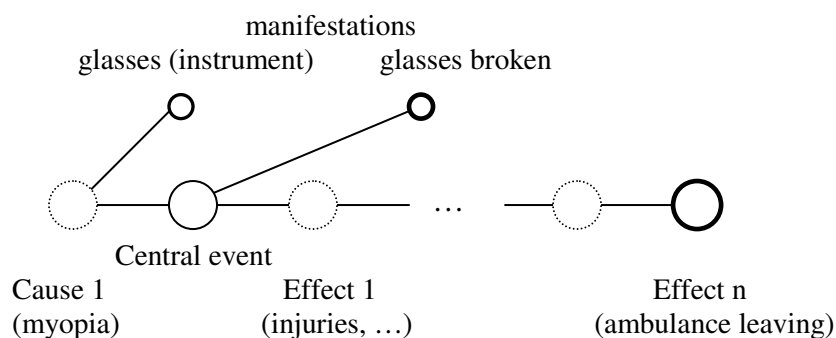


Figure 5

3.2.2.2 Zooming out

Taking into account the analysis of the examples of metonymic chaining and the cartoon above, the issue of what is left implied ('the unsaid') and what is being profiled in humor is to be subdivided into two dimensions: a quantitative and a qualitative one (table 3).³⁷ The quantitative dimension concerns the amount of information that can be left implied without losing the metonymic interpretation (resolution). In the cartoon above, one could ask - in quantitative terms- how many

³⁷ This distinction is adopted mainly for theoretical reasons. As an object of construal, these two dimensions are inextricably bound.

elements could still be left out of the picture without the hearer becoming unable to evoke the ACCIDENT scenario (resolve the incongruity). Would the cartoon produce a comparable humorous effect if the ambulance were left out of the picture? And what if the broken glasses or the saw were omitted? These quantitative issues have largely gone unnoticed in existing humor research. Another quantitative aspect concerns the functionality of the relative metonymic distance in humor appreciation. As we have demonstrated in the stupidity expressions, in a number of types of humorous text, the resolution of incongruity basically depends on tracing back an explicitly coded cause or effect along a *causal chain* (of events) to an ultimate effect or cause. Pertaining to the unsaid in humor, the question needs to be addressed how far these metonymic chains may be stretched in order to satisfy the optimality constraints of the *non-bona-fide* mode of communication. Also, as indicated before (3.2.1), the question may be raised to what extent metonymic chaining patterns presuppose a specific degree of conventionalization on behalf of the intermediate structures which are left implicit. To our knowledge, there is no systematic account of this complex subject to date.

As to the qualitative dimension of the unsaid or the profiled, relative salience plays a major role. Since not all aspects of a frame or scenario have the same relative salience within a frame, some aspects are more likely to be left implicit than others. As already emphasized before (see 3.1), in normal BF (bona-fide) communication, speakers tend to metonymically access target referents via salient or prototypical aspects of a frame. In humorous texts, however, there is a tendency (as shown in the analysis of the cartoon) towards the use of less salient reference points. Once again, systematic research is needed that addresses the role salience plays in humor generation and interpretation.³⁸ To conclude this brief outline of related questions on metonymy, resolution and the unsaid in humor, table 3 maps the quantitative/qualitative distinction hypothesized here. It is important to note, however, that the distinction is not an absolute one and that both dimensions generally interact to produce the ‘optimal effect’.

³⁸ However, see Giora (1997) for an account on salience in distinguishing figurative and literal language, and Giora (2003), Giora & Fein (1999a, 1999b) on salience in irony comprehension.

Dimension	Definition	Instantiations
<i>quantitative</i>	Amount of frame-related information that can be left implied without losing the metonymic interpretation.	- Non-linear: Number of explicit elements needed for unpacking the (rest of the) frame. - Linear: Number of steps that need to be taken in a (causal or temporal) metonymic chain in order to get to the intended target referent.
<i>qualitative</i>	Functionality of the relative salience of both the expressed and implied elements within the ICM.	- Non-salient aspects of an ICM are used as access point to the rest of the frame instead of salient ones.

Table 3

3.2.2.3 The King of spades...

It is to be noted that whereas in the previous examples, metonymic processing is elicited by a number of non-salient RPs – in balance with salient ones –, in the majority of cartoons, metonymy plays a constitutive role in a more complex nexus of cooperating phenomena. Take for instance the cartoon in figure 6, in which the reader is confronted with an initial incongruity: Why would someone receive a spade as the first prize in a ‘meet your star/idol’-contest, and be happy about it (facial expression of the cartoon character)? Resolving this incongruity involves a complex cognitive operation including metonymic reasoning.

The reader of this cartoon is confronted with two questions, the second being the most complex one: 1) who is the referent of *deinen Star* (“your star”) in the caption reading *Triff deinen Star-Wettbewerb* (“Meet your star-contest”), and 2) what motivates the spade as the first prize in this contest and how does it relate to the referent of Elmar’s star? Although metonymic reasoning is of major importance for resolving both issues, there is a clear difference as far as salience, hence processing difficulty is concerned. Since there is no preceding context making available a salient referent of the intended star, a solution should be sought in the visual and verbal elements provided by the cartoon itself.



Figure 4

The first question is a straightforward one given the observation that a number of Elmar's accessories set out clear RPs allowing a positive identification of Elvis Presley as the intended target. The poster with the sixties sports car, the guitar on the wall, and most importantly the stereotypical Elvis fan (notice the name *Elmar*) dressing up like the King himself (collar turned up, the hairdo) all serve to activate the Elvis frame and do so (collectively) in a salient (conventional) manner.

Presenting a spade as the first prize of this contest, however, initially makes the scene a nearly opaque one. Yet, accessing Elvis as the intended conceptual target of the first question provides the essential retrieval cue for the solution of the second question. As a matter of fact, establishing the first metonymic link between the accessories and Elvis seems to be a condition for the successful interpretation of the cartoon as a whole. The logical clash between the goal of meeting a star in the setting (frame) of a contest and the shared encyclopedic knowledge that Elvis is dead, triggers a local motivation for the appearance of the spade as a prize.³⁹ A common ground for the two concepts resides in the concept of DEATH, which has distinct prominence in the two connected concepts (ELVIS and SPADE). As pertaining to Elvis, death is a prominent feature associated with the singer as a prototypical dead rock star, and is thus automatically inferred metonymically. By contrast, a spade is only incidentally connected to the concept DEATH in that it can be used as an instrument to

dig up death's product, i.e. a corpse in a graveyard.⁴⁰ In other words, only after the concept of DEATH has been activated with respect to Elvis, the weak, contextually confined metonymic link between the spade and death can be established. And only by performing this complex cognitive feat, the reader can come to a relatively coherent interpretation of the depicted scene: the spade as the first prize is an instrument which can be used to 'meet' Elvis, i.e. by digging up his corpse.

It is important to note that, just as in the examples discussed above (3.2.1, 3.2.2.1), a *balanced processing difficulty* is triggered by a marked reference-point structure. The depiction of the spade triggers a metonymic chain, in which the conceptual 'distance' between reference point and target is stretched nearly to the limit. The accessories of the fan, on the one hand, provide a clear reference point to secure the referential accuracy (The King) of the entire cartoon. The spade, on the other hand, counts as a non-salient reference point (instrument) in this scene as it presupposes a specific construal of Elvis as a 'dead person' in order to motivate the scene to the full.⁴¹ The envisaged functional link between a spade and a (dead) person – construing the spade as an instrument in a graveyard scene where it can be used to dig up the product of death – is not a salient one. It is interesting to notice, though, that this weak link is tightened in the resulting contest scenario: the spade, the first prize in the contest, functions as a 'ticket' or 'invitation' to meet the (dead) idol. Obviously, these different interpretation aspects can only be treated in isolation for the purpose of clarity in the analysis.⁴²

³⁹ An additional element in the interpretation of this cartoon may very well be the widespread conviction among diehard fans that "The King lives!". Without taking any further notice of it, it might motivate the genuine happiness on Elmar's face.

⁴⁰ Note that, theoretically, other metonymic connections could be established between death and a spade, as e.g. a lethal MEANS-END relationship: a spade as the instrument used to kill a person. However, the script of MEETING somebody, activated in the cartoon caption, urges an interpretation in terms of a more 'harmless' MEANS-END metonymy.

⁴¹ This low salience is enhanced by the very setting of an *idol-meeting* contest.

⁴² Another, somewhat peripheral issue might be at play in our example as well (and contribute to the humorous effect). The CONTEST scenario triggers one interpretation of the otherwise polysemous verb *treffen* ("to meet") in *triff deinen Star* as the most salient one. However, by metonymically activating the scenario of someone digging up a corpse, one might be prompted to activate a secondary, less salient meaning of the verb as well, namely "to hit". Within the digging scenario, this meaning is plausible, if not salient, as well. By simultaneously activating the conventionalized metaphorical reading ("to meet") and the less-salient literal reading ("to hit") an additional *punning effect* is created, making the interpretation of this cartoon a complex cognitive effort, indeed.

3.2.3 Compression

A second prominent type of marked metonymic construal to be discussed, next to and closely related to metonymic chaining, is the use of *compression mechanisms* in the visual or verbal representation of a humor stimulus. In these cases, cognitive resolution hinges on the simultaneous decompression (or ‘unpacking’) of a single element onto the cause and effect of a metonymically structured chain of events. The present chapter explores the functionality of compression as (part of) a resolution mechanism in humor interpretation.

Recent insights in cognitive science have unraveled the cognitive importance of what Shakespeare (*Hamlet*: Act II, scene 2) described as “brevity is the soul of wit” (Mandelblit 2000; Chater 1999; Fauconnier & Turner 2000, 2002; Veale & O’Donoghue 2000; Perlmutter 2002). Complex structures in our experience with the world are stored in working and long-term memory in such a manner that the structures remain easily manipulable. Diffuse phenomena (like death, perception and sensation, war, etc.) are broken up into simplex causal chains. Especially within the framework of Blending Theory (supra 2.2.2), the economy of brevity has been explored in terms of *compression mechanisms* (F & T 2000, 2002) or *representational contracting* (Veale & O’Donoghue 2000).⁴³ Fauconnier & Turner (2002) list numerous instances of ‘compression as cognition’ in various corners of human reasoning: advertisements, riddles, grammatical constructions, the concept of biological evolution, the conceptualization of an attempt on a record in sport, and many more. Though highly different in nature, all compressions fundamentally serve the same goal: *achieve human scale*.⁴⁴

It will hardly be a surprise that some media make abundant use of this cognitive strategy, simply because of the restrictions imposed on the medium itself.

⁴³ In Blending Theory, the compression of vital relations is seen as one of the goals or optimality principles of integrating different mental spaces into a blended space. Sweetser’s (2000) analysis of human rituals as compressed conceptualizations serves as a good example of this functionality. In one such ritual, the Baby’s Ascent, someone carries a newborn baby up the stairs of the parents’ house. Mounting the stairs in this ritual symbolizes the course of life the child will follow. Thus, according to the ritual, the ascent of the stairs determines the child’s journey through life. Notice how this ritual scales down a very complex series of temporally and causally related events, life, to a single event of a person mounting stairs. Reaching the top of the stairs without stumbling simultaneously becomes the desired effect and the ritual cause of success in life. In other words, in the ritual, a lifetime is compressed into a single action taking only a few seconds.

⁴⁴ For an extensive list of different types of compression mechanisms, see Fauconnier & Turner (2002: 312-325).

Coulson & Oakley (2000: 187) notice that “[o]ne place where compression is quite frequent is in news headlines” (see also Feyaerts & Brône, in press). Not surprisingly, one-panel cartoons apply this strategy as well, since in many cases, a scenario needs to be ‘unpacked’ on the basis of a single image (Hünig’s (2002:10) account of *condensation*). The question then arises to what extent scaling down or syncopating causal, temporal or other relations plays a constitutive role in establishing the balanced processing difficulty typical for *non-bona-fide* communication.

For the present purpose, we will restrict our working definition of compression to those instances in which one element in the representation at the same time projects onto extremities of a metonymically related chain of events, resulting in a cause-effect compression or *metonymic tightening*. The unpacking of this double-functioning element in these cases is an essential part of the cognitive resolution mechanism, and contributes to the enhanced processing complexity (and optimal innovation effect) of the humorous stimulus. We are well aware of the broader applicability of the notion of compression, especially in blending theory, including cases of chaining and syncopation (3.2.1), causal simplification (infra), and even metonymy in general. We, however, argue that it is useful to distinguish, if only for analytical purposes, between these different phenomena.

The cartoon in figure 7, to a large extent comparable to the one in figure 4, may serve as an illustration of cause-effect compression:



Figure 7

Resolving the incongruity of this image ('why is this woman lying dead in her car on the bottom of a waterway?') involves unpacking a scenario on the basis of a restricted number of explicitly depicted elements. Presented without a caption, the essential retrieval cue seems to be the traffic sign lying next to the car. A first step towards the resolution of the incongruity is the establishment of a causal relationship between these two depicted elements.⁴⁵ In the present cartoon, we argue, the traffic sign – in combination with the car and the dead woman in the water – metonymically opens up the scenario of an accident. Parallel to the broken glasses in figure 4, the broken traffic sign represents a small side effect of the central event: a car got off the road and drove into the water, the driver ending up dead.⁴⁶ Moreover, this side effect also serves another function in the causal structure of the scenario as it metonymically represents the cause of the accident. The direct cause itself, which seems likely to be characterized as 'high speed at a dangerous spot on the road', remains implicit, but the representation on the warning sign provides indirect reference to it.⁴⁷ In other words, cause and effect are presented simultaneously in an integrated scene through metonymic reference in the traffic sign. Like in the saw accident, both functions are not activated with the same degree of salience: whereas the interpretation as an effect (be it not a primary one) comes along with the entire scene automatically, the reference to the cause of the accident is less salient as it requires re-interpretation of the static screen-shot in terms of a causally structured scenario. In any case, the linear course of events is compressed (or *metonymically tightened*) into a relation of simultaneity: the traffic signal present in the scene depicting an ultimate effect serves as a metonymic RP to the cause of the event.⁴⁸ The event structure underlying this

⁴⁵ Readers automatically construe a referential mapping between the traffic sign and the situation it depicts. Fauconnier & Sweetser (1996: 2) argue that "any concept of representation inherently involves two mental spaces, one primary and the other dependent on it. Entities in the two spaces may be *counterparts* of each other". In the case of the traffic sign, the image opens up a mental space for the representation (the sign) and the concept or situation it depicts (the quay and the possibility of an accident).

⁴⁶ There is also an interesting difference to be noted. Whereas in the saw accident, the primary effect of the accident was suppressed leaving only the broken glasses and the ambulance in profile, this cartoon does profile the primary effect to the full. In essence, both cartoons are instances of cause-effect compression, but the 'Heimwerker' example has the additional feature of suppression in the marked RP structure.

⁴⁷ One could argue (as Fauconnier & Sweetser (*ibid.*: 4) acknowledge) that such cases of *pragmatic functions* of representation overlap with or are a case of metonymy, in that they serve as a cognitive access point for a specific frame or scenario.

⁴⁸ It might be objected that this kind of compression is a necessary cognitive operation in the specific medium of one-panel cartoons, since only one static drawing is available, and that compressing does not have any function whatsoever in the humor process (Huber & Leder 1997). Once again, experimental inquiry is needed into the functionality of such compression mechanisms in contributing

cartoon can be represented as in figure 8; bigger circles stand for more central aspects of the event structure, bold appearance indicates which aspects are expressed; the dotted line connects the elements which are subject to a compression operation.⁴⁹

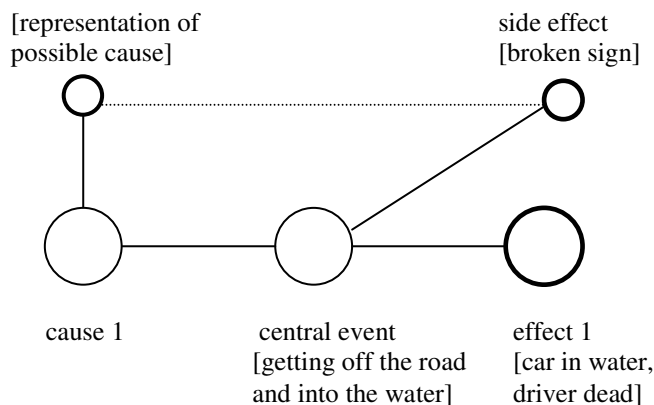


Figure 8

It is to be noted that identifying this compression as such does not account for the humorous effect. The reader is urged to find out the unambiguous direct cause of the accident. The representation of the saw accident – to draw this parallel again – did not cast any doubt as to how the accident must have happened. In the present case, however, an additional element seems to be required in order to grant this accident scenario the full humorous interpretation. In this respect, readers familiar with Perscheid's cartoons are aware of his predilection for humor making fun of women, among others with respect to their supposedly poor driving skills. This predilection serves as the cognitive background for processing an alternative accident scenario with a non-salient causal structure, in which the driver drives into the water because she thinks the traffic signal is not a prohibition sign but an order instead (cf. Ritchie's (2003) account of viewpoint and reinterpretation in humor construal).

Looking at the cartoon in terms of construal mechanisms, one is lead to conclude, again, that apart from profiling the primary effect of the accident as the general setting for the scene, its unpacking onto a humorous accident scenario hinges on *non-salient reference points*.

to the balanced processing difficulty, on the one hand, and enhancing the incongruous effect of the image, on the other. Psychological or psycholinguistic experiments testing some of the hypotheses on cognitive processing effort in humor will (hopefully) help to tackle this complex issue (see section 4).

3.2.4 Absurd causal logic

As recorded by Paolillo (1998), the inference of causal-metonymic relationships is a frequently applied strategy in one-panel cartoons of the type of Larson and Perscheid. In section 3.2.4.1, we will focus on the exploitation of the logical *structure* in a causal-metonymic relation. In section 3.2.4.2, we will briefly comment on another type of absurd causal logic, which does not pertain to the internal structure of the chain of events.

3.2.4.1 Distortion of the event structure

The adoption of an absurd causal relationship between the elements depicted in a cartoon and what is left to be inferred, is prominent in Perscheid cartoons: within the restricted corpus of 100 cartoons, at least 20 cases of absurd causality/temporality relations were detected, some more explicit than others. Take the cartoon in figure 9:



Figure 9

The reader of the cartoon is confronted with the incongruous image of a springboard [without a swimming pool] and two legs sticking out from a lawn. Although one will automatically infer that the legs belong to a person who sticks partly into the ground [PART-WHOLE], and that this person must have jumped from the springboard

⁴⁹ It is to be noted that the two functionalities of the traffic sign are compressed into its profiled role of a side effect of the accident. As a consequence, its metonymic indication of the accident's cause is not marked as being profiled.

[CAUSALITY], one is left with the question why this has happened. Here the caption, reading “Before swimming pools were invented” provides the necessary clue to *unpack* the scenario. The cartoon urges the reader to establish an alternative temporal and causal chain of events: swimming pools were invented after there had been springboards and corresponding painful landings for some time.

Notice how, once again, the humor effect is (partly) elicited by construing our experience in a non-salient way. The major constitutive feature of the entire scene is the deliberate suppression of the pool as the central element in a prototypical ‘swimming pool’ frame. With regard to the conceptual status of the springboard concept in this frame, the pool functions as a salient reference point, establishing a *dominion* in which the referent of the target (springboard) can be selected. In a prototypical constellation, using Langacker’s terminology, the springboard counts as the dependent concept, whereas the pool is the autonomous one.⁵⁰ Accordingly, swimming pools can easily be conceived of without activating the notion of a springboard, whereas the conceptualization of a springboard heavily depends on the activation of the pool concept. Profiling a springboard without a swimming pool, then, offers the opportunity to *reverse the dependency relationship* between both concepts, thus construing a humorous incongruity, in which the swimming pool figures as the concept which is dependent on the springboard (*figure-ground reversal*). The exploitation of this reversed relationship in the depiction of a person, who actually dives from a springboard with no pool underneath it, adds to the absurdity of the situation.

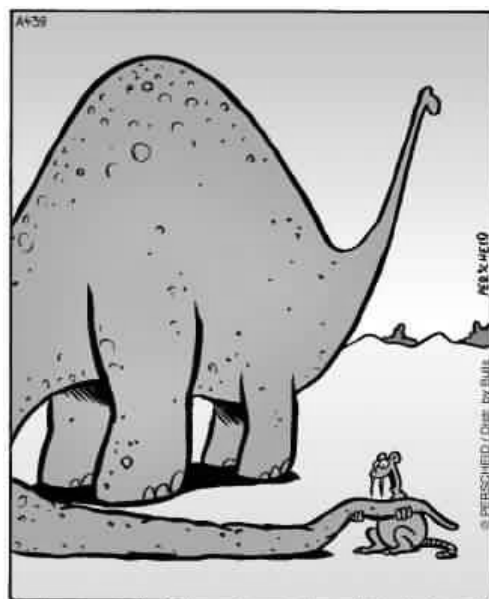
Still, motivating the absurdity of the scenario (‘diving from a springboard when there isn’t a pool results in accidents’) does not suffice to explain the humor strategies used in this cartoon. The caption forces the reader to adopt a linear-causal relation that is exactly the opposite of the prototypical one stored in encyclopedic knowledge. In other words, the reader is urged to conceptualize a counterfactual scenario in which the construction of swimming pools is related causally (as a consequence) to the crashes resulting from the original constellation. Provided the reader is willing/able to indulge in *willing suspension of disbelief* (Raskin 1985), the counterfactual scenario ‘makes sense’ (*local logic*). It is the clash between the causal-metonymic structure in the counterfactual scenario (springboard → swimming pool)

and the contiguity relations as stored in the encyclopedic knowledge (swimming pool → springboard) that fundamentally contributes to the humorous effect.⁵¹

As for the general purpose of our paper, examples like these make clear, once again, to what extent metonymic reasoning is challenged in interpreting different patterns of IR-humor. Next to the construal mechanisms already discussed in previous examples, this cartoon has shown that *distortion (reversal) of conventional relationships* (temporal, causal, final, ...) inevitably leads to the activation of a marked reference-point structure.

3.2.4.2 Qualitative adjustment of a single causal element

To conclude the empirical part of this paper, examples like the cartoon in figure 10 may be categorized as further cases of ‘absurd causal logic’, instantiating a single type: a simple cause is attributed to a complex matter.



DER WAHRE GRUND FÜR DAS VERSCHWINDEN DER
DINOSAURIER WAR DIE SÄBELZAHNMAUS.

The true reason why dinosaurs have
disappeared is the saber-toothed mouse

Figure 10

⁵⁰ “One structure, D, is dependent on the other, A, to the extent that A constitutes an elaboration of a salient substructure within D.” (Langacker 1987: 300).

⁵¹ It should be noted that the play on inverted causal-metonymic relations is not a marginal phenomenon in Perscheid’s cartoons. There is a series of cartoons presenting an incongruous image that gets partly resolved with the help of the caption. Apart from captions triggering a distorted causal-temporal reading by assuming an ‘alternative’ (and counterfactual) cause for an existing state of affairs (as in the swimming pool example), others activate purely causal inversions or absurd conditionals.

Whereas the cartoon analyzed in 3.2.4.1 involves a distortion of the internal logical alignment, cases like the one in figure 10 preserve their causal structure as such, but provide a qualitatively marked instantiation of one aspect in this structure. In 10, the presentation of a rodent with giant teeth as the ultimate cause of the dinosaurs' extinction serves a humorous purpose because, among other factors, a complex causal matter is stripped down to a single causal explanation, contrasting two animals of a radically different size. The result is a causal structure, which is dragged into the absurd by the specific elaboration of the cause without reversing an existing schematic causal logic. One could categorize this simplification operation as another type of compression, where comparable to metonymic chaining, elements are left out in favor of an oversimplified, human-scale representation.

3.2.5 Conclusion

In the empirical part of this paper we have analyzed a selection of verbal and non-verbal, IR based humorous 'texts', the interpretational relationship of which can generally be categorized as a metonymic one. Taking into account the image-schematic structure of metonymy as a reference-point phenomenon as well as the characterization of humor as a non-bona fide mode of communication, we have identified four construal strategies which each result in a *marked* reference-point structure: 1) profiling of non-salient reference points, 2) suppression of salient reference points, 3) compression of two conceptual entities into a single reference point, and 4) distortion of the prototypical causal logic. As such, these strategies do not represent new construal mechanisms but rather flexible adaptations of general cognitive categorization abilities. With respect to the envisaged systematic description of what traditionally has been labeled the logical mechanism (LM) in humor interpretation, this observation invites to provide an integrated cognitive, non-modular account of this phenomenon, focussing on the extended application of general construal mechanisms.

The cognitive achievement of prototypical cases of metonymy, in which maximal referential accuracy and minimal cognitive effort are successfully combined, offers an interesting perspective on the characterization of marked reference-point structures as instigators of a *balanced processing difficulty*. It turns out that the application of these four non-prototypical construal operations, which inevitably leads

to an increased cognitive effort, is balanced out by the careful selection of salient reference points as well. As a result, despite a non-routine processing effort, the metonymic requirement of accuracy can be maintained.

4 Perspectives for experimental research

Many of the concepts introduced in the previous sections are in serious need of experimental psycholinguistic backup before they can be lent significant theoretical weight to.⁵² Most of them (e.g. balanced processing difficulty; quantitative and qualitative dimensions of marked reference-point constructions) have been deliberately formulated in such a manner so as to render them empirically falsifiable. However, we will not, in the present context, present empirical data that support our claims. Rather, we will refer to some of the psycho- and neurolinguistic studies that have experimentally addressed issues of humor processing, especially in relation to our own topic (complexity of construal). Based on these insights, some preliminary experimental hypotheses are presented that will be tested in the near future.

Only very recently, empirical research in humor processing has received renewed attention since it almost disappeared fully from the scene after the 1970s. In the 1970s, an abundance of studies addressed various aspects of joke interpretation (Suls 1972; contributions in Goldstein & McGhee 1972 and in Chapman & Foot 1976, etc.). The 1980s and the first half of the 1990s, in contrast, only seem to have produced isolated studies (Brownell et al. 1983; Dagge & Hartje 1985; Kreidler et al. 1988). Only during the last few years, a systematic rediscovery of humor as valuable object of empirical research is sensible. This ‘resurrection’ is mirrored in a cluster of intriguing psycholinguistic (Giora 2002, 2003; Colston & Keller 1998; Norrick 2001; Vaid et al. in press; Mitchell, Graesser & Louwerse 2002) and (clinical as well as non-clinical) neurolinguistic (Shammi & Stuss 1999; McDonald 1999; Coulson & Kutas 2001; Coulson 2003) studies. Among the various aspects that have been investigated are localization of the humor interpretation ‘module’/‘battery’ in the brain (Shammi & Stuss 1999; McDonald 1999; Giora et al. 2000; Coulson 2003), the importance of marked informativeness and salience imbalance (Giora 1991, 2002, 2003), the psychological reality and cognitive cost of frame-shifting (Coulson & Kutas 2001),

⁵² This claim actually applies to a significant part of the humor-theoretical work: “There are a number of issues that have not been addressed: timing, despite a valiant attempt (Norrick 2000), still remains a weak spot in the linguistics of humor. [...] Finally, the psycholinguistics of humor is seriously wanting. [...] There is need of research addressing the degree of this match, as well as some basic data, for example, how long does the resolution of incongruity take? Is a text with unresolved incongruities harder to process than one in which all incongruities get resolved?” (Attardo 2001a: 208).

the role of context (Mills et al. 2002; Giora 1997), and the time course of the interpretation process (Vaid et al. 2003; Norrick 2001).

Despite this renewed interest in experimental humor research, some essential aspects of stimulus construal still need to be fully explored. One of those issues is the influence of stimulus complexity on humor appreciation (Nerhardt 1976). Jerry Suls (1972: 92ff) found that the views on the influence of the complexity of the Stage-2 problem solving (resolution), i.e. the degree of cognitive demand for the resolution of incongruity, differ radically. Whereas Zigler et al. (1967) argued that humor peaks just before it becomes impossible to interpret, Goldstein (1970) claims the opposite: the peak of humor appreciation is situated on the boundary of triviality. Although Suls ends his discussion by explicitly stating that “more research is needed to determine the effects of complexity on humor appreciation” (1972: 92), as yet no systematic experimental research has been done into this complex issue. On the contrary, although many of the more recent (and cognitively oriented) humor studies touch upon topics that (automatically) elicit the question of the role of complexity, they have not fully covered this tricky issue yet. In the following, we list some extracts, taken from different sources, that all elicit the same basic question: what is the ‘optimal’ complexity of the resolution process in order to create the best possible humor effect?

- (15)a. “Jokes and point-stories are markedly informative. Their final informative messages are marked in that they are too *distant*, in terms of the number of similar features, from the messages preceding them” (Giora 1991: 469).
 “[T]he joke’s marked constituent is least relevant but not irrelevant, that is, not entirely distant or unrelated” (ib.: 470)
- (15)b. “A stimulus would be optimally innovative if it involves
 (a) a novel response to a familiar stimulus,
 but
 (b) such that would also allow for the automatic recoverability of a salient response related to that stimulus so that the similarity and difference between the novel and the salient would be accessible” (Giora 2002: 12)
- (15)c. “Another issue that is unclear from the present study is the potential influence of differences in joke type, *difficulty* and/or funniness. Presumably,

jokes are harder to figure out, for whatever reason, would slow down processing time” (our emphasis; Vaid et al. 2003: 1443).

(15)d. “For the joke to function as such, some information must be left unsaid [...]. The modality of this delicate explicit/implicit equilibrium has yet to be explored fully” (Attardo 1994: 289).

“Finally, what is the relationship with the unsaid? Previous treatments have failed to do justice to this complex issue: It is clear that the systematic withholding of information is a violation of Grice’s cooperative principle. What is less clear is the relationship between the inferential work and the absence of information that needs to be figured out” (Attardo et al. 2002: 40-41).

Concepts like these are, for several reasons, notoriously difficult to empirically verify. First, how can we objectively determine (in quantitative/relative terms) the complexity of a given stimulus or complexity of the intended cognitive resolution process? Should this be based on degree of conventionality, contextual expectedness, length of the inferential chain, the cognitive mechanisms that are exploited (e.g. frame shifting), or maybe a combination of all of these parameters? A second problem, related inferentially to the first, is the (near-)impossibility of subject-independent measurement. Because complexity cannot be established objectively without recourse to an experiencer (complexity is fundamentally attributed to a concept, not an inherent characteristic), significant differences may appear in what subjects consciously and unconsciously experience as a complex resolution process (and *in extenso* humorous?). Third, there is not necessarily a one-to-one mapping between abstract variables, like e.g. complexity, and measurable data, like reading times (this does not, of course, count exclusively for humor research). Keeping these methodological restrictions in mind, a keen experimental design is needed that sharply controls the data, and actually measures the influence of complexity on processing time and humor appreciation (Suls 1972: 97f).

By addressing the notion of complexity of the cognitive resolution process through one its (many) instantiations, viz. marked reference-point constructions, we have potentially introduced variables that are specific enough to be tested in an experimental design. Take for example the hypothetical distinction between the quantitative and qualitative dimension of metonymic processing complexity (3.2.2.2).

On the quantitative axis, we discussed metonymic-inferential chaining as one of the possible instantiations (illustrated by examples of scalar humor). Does the length of the metonymic-inferential chain affect processing time (tested e.g. in a self-paced reading or eye tracking experiment (Frisson & Pickering (1999)))? If so, is there a (significant) correlation between processing time (as a reflection of processing difficulty) and humor appreciation? Future experimental research will need to inquire into these complex issues.

5 Concluding remarks

Cognitive semantics presents itself as the framework most suitable for the analysis of dynamic meaning construction. Hence, if it wants to live up to its name, it should provide adequate tools for tackling one of the most creative uses of language conceivable: humor. With this paper, we hope to have shown, both theoretically and descriptively, that this is not an entirely empty promise, despite the relatively poor attention to humor phenomena in cognitive linguistics. Centered around the basic cognitive concept of construal, we have argued that cognitive semanticists can provide useful insights that tie in with existing lines of research in linguistic humor analysis. More specifically, cognitive approaches to language might offer a much-needed, integrated approach to resolution mechanisms in humor interpretation.

As a first attempt at such a non-modular approach to incongruity resolution in humor, we have focussed on one specific construal operation in its function as resolution inducing mechanism, viz. metonymy. The analysis of a variety of different instances of verbal as well as visual humor has revealed that metonymic construal, as a type of reference-point construction, is systematically exploited in order to achieve a higher-level, teleological principle: optimal innovation (Giora 2002). In other words, the *conditio sine qua non* for eliciting a humorous effect in problem-solving humor, optimal innovation, is in some cases achieved through the creative elasticity of a basic cognitive mechanism, in this case metonymy. In this respect, the present account is intended as an initial impetus to a more encompassing account of 'marked' construal in humor.

By adopting a construal approach to incongruity resolution, the linguistic interest in humor interpretation mechanisms might stretch further than the purely humor theoretical perspective. If basic cognitive construal operations can be found to function in the inferential process of incongruity resolution, this supports the claim that even *full creativity* (Bergen & Binsted, submitted) is subject to general cognitive mechanisms. Instead of focusing on the uniqueness of the humor phenomenon (e.g. in logical mechanisms), a cognitive linguistic account can reveal the way in which day-to-day cognitive capacities are explored and pushed to the limit for humorous purposes. What is more, we are firmly convinced that a study of cognitive behavior in humor interpretation does not only serve the goal of revealing some of the

complexities of humor. The study of marked patterns can be of crucial importance to uncover cognitive structure in se. Which brings us back to Arthur Koestler, the first to notice the common ground in radically different cognitive activities:

The bacillus of laughter is a bug difficult to isolate: once brought under the microscope, it will turn out to be a yeast-like, universal ferment, equally useful in making wine or vinegar, and raising bread (*The Act of Creation*, 1964: 32)

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