Popular science concepts and their use in creative metaphors in media discourse[1]

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Abstract

Wissenschaftliche Lexeme werden im Mediendiskurs so vielseitig und kreativ verwendet, dass ihre fachterminologische Herkunft oft aus dem Blick gerät. Der Ausdruck *Dinosaurier* ist hierfür ein gutes Beispiel: Dinosaurier sind zum Ikon der Unterhaltungsindustrie geworden und der Ausdruck wird in Medientexten zumeist metaphorisch verwendet. Auf der Basis von englischsprachigen Korpusdaten untersucht der Aufsatz Metaphern, in denen der ‚Dinosaurier'-Begriff als Bildspender fungiert, speziell im Hinblick auf ihre Verwendung in „Fabel"-ähnlichen Szenarios, die als Schlussfolgerung eine „Moral" enthalten, die auf einem eng begrenzten Inventar von Präsuppositionen über das „Schicksal" der Dinosaurier beruht (im wesentlichen: dass *Dinosaurier* genante Wesen aussterben „müssen"). Es wird gezeigt, dass selbst in solchen Texten, in denen diese Annahmen explizit negiert werden, sie von der textsemantischen Analyse berücksichtigt werden müssen, da nur so die aus dem semantischen Widerspruch resultierenden kognitiven und pragmatischen „Blending"-Effekte hinreichend analysiert werden können.

Media discourse continuously makes creative and eclectic use of science terminology – often to the point of contradicting the views of scientific experts on the subject matter in question. One such instance is the case of dinosaurs which have become prominent icons in popular culture, as well as favourite metaphors in various media discourse domains. Using corpus-based data from (English-language) public discourse, the paper explores metaphors based on the source-concept of DINOSAUR, which are characterized by creative elaborations that expand the basic source-target mapping into fables or 'stories with a moral lesson'. It is argued that in order to explicate such innovative meaning construction, the conceptual analysis of metaphor that focuses on basic mappings needs to be complemented by an approach that accommodates "blended scenarios" that are not deducible from either the source or the target inputs and constitute emergent semantic structure. It will also be shown, however, that there are constraints to this innovation potential in the form of source-based default assumptions about 'prototypical' source aspects (e.g., that dinosaurs were/are victims of extinction). Even if these assumptions are violated in a specific metaphor blend, they represent the standard by which the blended scenario is judged to be extraordinary, ironic, or in other ways pragmatically marked.

1. Metaphoric blends and their constraints

An influential reader on cognitive metaphor theory, which was published in 1985, had as its title *The Ubiquity of Metaphor* (Paprotté and Dirven 1985). Since the 1980s, it has not only become a commonplace in cognitive linguistics to

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emphasize the all-pervading presence and influence of metaphor in language and thought and in the social practices 'we live by' but also the ubiquity of further semantic phenomena that used to be relegated to the realm of especially weird and wonderful rhetorical devices, such as metonymies, allegories, counterfactuals (Lakoff and Johnson 1980, 1999, Barcelona 2000, Fauconnier and Turner 2002, Dirven and Pörings 2003). Since the advent of Cognitive Blending Theory, the combination of the theory of "mental spaces" with a dynamic model of "integration networks" of varying complexity, the analysis of creative concept construction in discourse has been given a further boost. Multiple semantic fusion effects, as in the counterfactual statement *If Clinton were the Titanic, the iceberg would sink*, or in the depiction of Death as the *Grim Reaper* (Fauconnier and Turner 2002: 218-221; Turner and Fauconnier 2003: 476-482), have been shown to result from an interplay of metaphoric and metonymic integration).

A particular characteristic of blending theory is that in the "mental space" model, semantic "material is projected from both the source and target spaces to the blend" (Grady, Oakley and Coulson 1999: 103); in other words, it allows metaphor theory to account for the construction of new meaning that incorporates aspects of both input and target spaces without being ontologically compatible with either of them. Thus, in the 'Clinton-iceberg' example, the two mappings, 'Clinton : Titanic' and '[Victim of scandal] : iceberg', can only be understood against the background of a) the presupposed historical narrative of the ill-fated ship voyage and b) "crucial causal structure and event shape structure" of the scandals engulfing US President Clinton" (Fauconnier and Turner 2002: 221-222). The respective disaster and success outcomes of the inputs are not just incompatible with each other but, on account of their combination in a counterfactual blend, the resulting cognitive dissonance achieves a rhetorically creative effect. Thanks to the knowledge that the historical ship *Titanic* did in fact sink and that sinking is normally impossible for icebergs, the reader can savour the special effect of the hyperbolic inference that Clinton's political survival techniques apparently defied even the laws of nature.

Whilst the explanatory power of blending theory is evident for reconstructions of innovative semantic integration phenomena, we may ask what constraints there are upon the apparently open-ended possibilities of mutual influence

between semantic "spaces" in complex metaphoric blends. One main constraint is relatively obvious: target space aspects that are essential for the intended meaning must be preserved 'at the expense', so to speak, of the source input. Thus, with regard to the above quoted *Clinton-iceberg* example, the knowledge of Clinton's political survival provides the 'benchmark' for the interpretation of what happens to the Titanic and the iceberg in the blend. These constraints were accounted for in the conceptual metaphor theory by a corollary of the "Invariance Principle", which stated "that image-schema structure inherent in the target domain cannot be violated, and that inherent target domain structure limits the possibilities of mappings automatically" (Lakoff 1993: 216). In the terminology of blending theory this conclusion could be reformulated as an assertion that the knowledge "schemas" that are made accessible by the target input inform the access to schemas for the source input and, if necessary, override their "cognitive topology".

But are there comparable constraints that can be associated with the source input? Or is it a case of 'anything goes'? What happens to our everyday knowledge about icebergs or other natural kinds, when we imagine they might be sinkable (or attain any quality they normally do not have)? In this paper, some tentative answers for these questions will be formulated on the basis of a special corpus of metaphorical uses of the term *dinosaur* in the English-speaking press, which was assembled from the *Bank of English* corpus.[2]

As a first step, all texts containing the expression *dinosaur* were sampled from the Bank of English: this primary collection comprised some 4500 separate text passages (of up to one hundred words each) that amounted altogether to more than 380,000 words. Subsequently, all references to the scientific findings about the 'real' dinosaurs and all references to modern simulated reincarnations in the form of museum exhibits, film monsters or toys were excluded. The remaining sample comprises more than 900 text entries, in

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[2] Cf. www.titania.bham.ac.uk/ (accessed on 28 November 2007) for the *Bank of English* corpus, which is jointly owned by HarperCollins Publishers and the University of Birmingham and is in parts publicly accessible. In 2005, the corpus stood at 450 million words and it is continuously updated and being added to. It contains written texts from newspapers, magazines, fiction and non-fiction books, brochures, leaflets, reports and letters, as well as transcriptions of conversation, radio broadcasts, meetings, interviews and discussions, etc. For its use in metaphor research cf. Deignan 1995 and 2005, Moon 1998, Musolff 2004 and Charteris-Black 2004.

which the topics are referred to as *dinosaurs* or compared to dinosaurs, whilst the respective context does not sustain a literal interpretation as the primary sense. The analysis can therefore operate on the working hypothesis that the dinosaur references here are metaphorical. As the sample has not yet been comprehensively annotated, a quantitative analysis remains to be conducted. Experimental data about processing time and interpretation techniques across groups of subjects are not available. The data presented here are therefore meant to serve as an exemplary survey over the range of conceptualizations in *dinosaur* metaphors. Even a few examples already show that the conceptual scope is quite large. Consider the following cases:

(1)   Beset by a $4 million (£2.7 million) deficit […], the National Association for the Advancement of Coloured People turned its back on its traditional leaders when Mrs Evers-Williams was elected […]. "*We may be a dinosaur, but we are not going to become extinct […]," Mrs Evers-Williams said.* (NB3--950220 - guard/UK)[3]

(2)   *Has the dinosaur changed its spots?* This, the *Daily Mail* seems to think, is the question convulsing the nation. "Tony Blair", wrote one of the paper's star writers after the Clause 4 debate "has apparently achieved an impressive victory over his party's left-wing […]". (NB3--950513 - guard/UK)

(3)   In order to preserve downtown's Varsity Theater, an art-deco landmark dating back to the 1920s, it will have to become a major bookstore, according to developer Charles 'Chop' Keenan. *"A single-screen theater is a dinosaur in today's world.* It can't sell enough candy," said Keenan, who is planning to do a historical renovation […]. (NU3--940223 - usnews/US)

(4)   Cairns is a M[arks] & S[pencer]-sceptic: "*It is just like a big dinosaur. Everything has moved away from them and they are completely out of touch.* Then they realise they have done something wrong, so they panic and make mistakes. It is hard to back-pedal." (NB1--010814 - times/UK)

(5)   An awful lot of people, including the police, Immigration and Customs and Excise, have not wrapped their brains around the problems and it *reminds me of the story, millions of years ago, when the little dinosaur ran to the big dinosaur. He said, "Look at the changes happening around us. What should*

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[3]   Italics in these and the following quotations are by the author. Source references are those of the Bank of English: In the case of British media sources they indicate the respective publication and the date (e.g., here: "NB3--950220 - guard/UK" = *The Guardian,* 20 February 1995: likewise: "times/UK" = *The Times,* "newsci/UK" = *New Scientist,* etc.). For further details cf. the "Bank of English User Guide" at www.titania.bham.ac.uk/docs/svenguide.html (accessed on 28 November 2007).

we do?" And the big dinosaur replied, "Well let's just sit back and see what happens, shall we." The Data Protection Act is still a great piece of legislation. Whether it's got teeth or not, we'll see. (NB1--000110 - times/UK)

In these examples, it is obvious that the target referents are not the pre-historic 'giant reptiles', whose fossils have captured the imagination of both scientists and the public since the 1840s (*Encyclopaedia Britannica* 1993: 315-330) but present-day social or economic institutions and persons representing them. Why are they called - or, in the fifth example - compared to *dinosaurs*? One common assumption - in Max Black's (1962: 42-44) terminology, a part of the "system of associated commonplaces" - that seems to underlie them all could be paraphrased as the expectation that whatever or whoever is labelled a *dinosaur* is extinct or likely to go out of existence soon.

The strange thing about the dinosaurs in these examples, however, is that they all seem to defy, or at least attempt to defy, this assumption in some way. In quotation (1), a (metaphorical) *dinosaur* is aware of its precarious status but is also resolved to *stay alive;* in example (2) the *dinosaur* Labour Party not only lives on but even performs the leopard's famous trick of *changing its spots.* In example (3), the *dinosaur* of the single-screen cinema is said to be doomed; however, the topic referent, i.e. the "Varsity Theater", is supposed to be *preserved* by being turned into a major bookstore.[4] In (4) the Marks & Spencer critic imputes that being a "big dinosaur" not only involves impending extinction but also the agony of realizing one's mistakes and tentative but belated *back-pedalling.*

This is to some extent also the case for the "little dinosaur" in example (5) who tried to warn his big mate only to be fobbed off with a casual remark indicating the latter's false sense of security. This fable-like narrative is not just based on the 'raw' source story about some giant prehistoric creatures going extinct, but rather on a humanized version, where the *dinosaurs* are depicted as if they were persons contemplating their next move. The dinosaur concept is deliberately fictionalized, for if there is one thing that we, as members of the

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[4] The corpus also contains a text passage from a later date referring retrospectively to the *failed* rescue attempt for the "Varsity" cinema: "[…] Keenan and Landmark talked of retrofitting the single-screen theater – *a financial dinosaur that is facing extinction across the country* – into a three- or four-plex movie house that would be more financially viable. The plan never came to fruition though […]." (NU3--940608 dinosaur - usnews/US).

general non-expert public, know or 'remember' of real dinosaurs it is the fact that they did go extinct without a chance of doing something about it, let alone having conversations about it. However, the gist of the fable in (5) is that the state institutions' alleged indifference to the Data Protection Act might have a similarly disastrous consequence as the "old dinosaur's" laid-back attitude to changes in his environment. Hence, the reader is guided to the conclusion that the institutions should do what the real dinosaurs never *could* have done.

So, what precisely is the semantic and epistemic status of the source input in these metaphorical blendings? Is the resulting "blended space" at all limited by source domain 'knowledge' and is it of the same kind as that of target input information? The anthropomorphic fantasy about dinosaurs pondering their fate evidently is a case of a "target override" over the source-schema, but would it not be more appropriate to derive from this the conclusion that the target-related schemas, rather than 'limiting' the cognitive topology of the source-related schemas (Lakoff 1993) in fact enlarge or even explode it, so that we imagine situations which we know did not happen and could never have happened? In which sense can we then speak at all of source 'knowledge' serving as input in the blends cited above? However, some such knowledge must be accessible, as asserted in another example from the corpus:

(6)   These metaphors are not just poetic fancies - they express underlying theories held by both lay and scientific people. For instance, *everyone knows what is meant when an institution is referred to as a "dinosaur".* (MB2--920215 - newsci/UK)

How much - and how little, and how much constrained - source knowledge do we have to assume as being accessed when members of the general public makes sense of a metaphorical reference to *dinosaurs*?

2. Dinosaurs: the basic scenario

The most well-known aspect about dinosaurs, and part of any conceptual schema that can be used as a source for their metaphorical application, is the fact that they have gone extinct. No less an authority on evolution than Charles Darwin highlighted the case of the "Dinosaurians", as he called them, because they were "in many important characters intermediate between certain reptiles and certain birds", which supported his more general theory that all vertebrate classes "were descended from some one prototype"

(Darwin 2004: 185-186). Dinosaur fossils provided crucial evidence for his evolutionary theory, as they demonstrated the connection of species that had hitherto been conceived as separate. The status of the dinosaurs as an extinct group of animals was particularly important, for it showed that the traditional reliance on the contemporary range of species to survey the animal kingdom was insufficient. If an important 'missing link' could be found among dinosaur fossils, then it made good sense to pursue a research programme of searching for links among *all* extinct (and extant) species until the theoretically constructed evolutionary chain was complete.

The pre-historic existence of the dinosaurs was, and still is, a political and ideological issue, on account of its interpretation as evidence for Darwin's concept of evolution, i.e., as the accepted scientific explanation for the origin of life on earth. According to the *New Scientist*, dinosaur fossil exhibitions in the USA are still considered to be "a political statement in the US, where creationists still argue against the teaching of evolution" (*New Scientist*, 3 June 1995). This avoidance of teleological interpretation in scientific approaches does not imply that humans cannot learn anything from the fate of the dinosaurs. The corpus contains for instance, a statement by Sir David Attenborough, made on the occasion of his presidency of the British Association for the Advancement of Science that "mankind should realise that, like the dinosaur, the human race could some day face extinction" (SB2-- 910829 - bbc/UK). This explicit comparison gives rises to inferences about evolutionary history that underpin the warning about humanity's future; but crucially they do not *imply* a meaningful overall goal of evolution. Modern evolutionists use the reference to the extinct 'giant reptiles' in particular to drive home their argument that biological evolution should not be invested retrospectively with a *telos* or inherent 'design':

(7)   One of the consequences [of the extinction of the dinosaurs] was the evolutionary diversification of mammals […]. However, this is not to argue either *(i)* that the mammals caused the extinction of the reptiles, or *(ii)* that the mammals are in some sense 'more adapted' than the dinosaurs. (Rose 1998: 299).

(8)   […] one of the few predictable things about evolution […] is its unpredictability. No dinosaur could have guessed that descendants of the shrew-like beasts that played at its feet would soon replace it […]. (Jones 2000: 299).

(9)   Evolution, or its driving engine natural selection, has no foresight. In every generation within every species, the individuals best equipped to survive and reproduce contribute more than their fair share of genes to the next generation. (Dawkins 2005: 283).

The scientific concepts of the dinosaurs' place in evolutionary history clearly contrast with the notions about extinction that are underlying the above-quoted examples (1) to (5). In the corpus examples, the topic referents that are referred to as or compared with dinosaurs are all portrayed as having a chance or even a choice of escaping from the 'typical' dinosaur fate. They do what the real dinosaurs should have done had they not been unconsciously acting animals, but instead self-conscious and reflecting subjects. We may assume that most users 'know' that the animal dinosaurs were not in fact aware of or responsible for their own demise, but this knowledge is suspended for the purpose of using the reference to dinosaurs in the metaphor. The 'lesson' of the mini-narratives about modern dinosaurs is that they have precisely the chance that the ancient ones did not have. There is, thus, a difference between, on the one hand, the general, non-expert "source" knowledge, which is based on information that can be checked against expert knowledge, and, on the other hand, its construal in the blend that serves as a "source" for inferences such as those generated in examples (1) to (5). Popular source knowledge about dinosaurs only includes the notion that they went extinct in the course of evolution, whereas the construed "input" in the blend depicts them as having had a kind of choice between survival and extinction - and as having made the wrong choice. It is this construed source input in the blended space that serves as a basis for evaluative and pragmatic inferences (i.e. that the dinosaurs' decision sealed their fate, that it was wrong and can serve as a warning for humans).

To capture this insight into the constructed and richly inferential status of the source in the blend, cognitive researchers have used the category of "scenarios" as a special sub-type of conceptual "schemas" that provide more than just a 'schematic' topology to build on (Lakoff 1978: 285-286; Fauconnier and Turner 2002: 217-218; Musolff 2006: 27-36). Scenarios consist of mini-narratives that specify participants, their intentions and courses of action, and likely outcomes, plus standard evaluations of these outcomes, e.g. in terms of whether they are successful or unsuccessful, normal or abnormal, permissible or illegitimate etc. The *dinosaur* scenario that is accessed as part of the source

input relevant for our initial examples includes the notion of extinction as well the evaluation that extinction constitutes a sub-optimal outcome for the creatures concerned, i.e., that extinction is *not* a good thing and should ideally be avoided. It is on the strength of this evaluative bias that the *dinosaur*-references in the corpus examples (1) - (5) can be understood as speech acts that highlight the chances of one's own or someone else's capability and willingness to survive and adapt to a changing environment.

We can summarize these preliminary results by stating that the 'scenario' accessed in understanding metaphorical references to institutions as dinosaurs includes a 'mini-story' involving as 'participants' creatures that are in danger of going extinct, but that also have a choice of preventing this default outcome by adapting to changes in their environment. This scenario can plausibly be considered to relate to a larger narrative about evolution that competent adult members of the discourse community are at least vaguely aware of. (This assumption of course raises questions about the acquisition of the evolution narratives, which cannot be resolved on the basis of the corpus data alone. In order to handle, for instance, the concept of toy-dinosaurs or dinosaurs as parts of TV series, children must access some kind of 'dinosaur' source notion, but this does not entail that they have a notion of evolutionary history or of the extinction outcome; i.e. they may believe that dinosaurs still exist. Furthermore, the extinction outcome may have different meanings, in a Darwinist concept of evolution than in a "creationist" or "intelligent design" perspective on nature. To explore these aspects would necessitate the inclusion of empirical data on the acquisition and interpretation of evolution concepts across different age and social groups.) The evolution narrative is needed only as a background assumption to support the notion of extinction in the *dinosaur* scenario. The notion of extinction, however, appears to be an essential part of the scenario, as can be demonstrated by ample evidence of further examples:

(10) […] a political party must model itself on biology, that is to say, if it is to remain alive and kicking it must adapt itself to the changes in a changing world. *Dogmatic parties would die as surely as the dinosaur.* (Hugh Molson, "The Tory Reform Committee", New English Review, Vol. XI, 1945, p. 250) (brbooks∕ BB------561 dinosaur." 17 Hugh UK)

(11) […] analysts say he [the chief executive of Unilever] could be running a far greater risk if he maintained the status quo. "*If Unilever does not change, and change fast, the group will become a dinosaur,*" says one. (NB1--000227 - times/UK)

(12) Bruce Babbitt (= US Interior Secretary Nominee) [said]: "*The Bureau of Reclamation is a dinosaur and it's going to go extinct* because their leadership can't think of anything except flying their jets out to the West to unravel new blueprints for dams that nobody wants". (SU1--921224 - npr/US)

(13) […] in the face of music's computer revolution the humble rock drummer should by now be an extinct dinosaur nailed among the memorabilia on the walls of the Hard Rock Cafe. Unlike the dinosaurs, however, and against all the odds, drummers have evolved. (NB1--990711 - times/UK)

Quotations (10) to (13) are evidence for an argumentative usage of the extinction outcome of the *dinosaur* scenario as an argumentative warrant for a 'warning from (evolutionary) history that can be read as a quasi-syllogism leading to a conditional conclusion:

a)   Source input: The dinosaurs went extinct, because they did not adapt to changes in their environment.

b)   Target input: Human beings (and their institutions) can go extinct but do not want to go extinct.

c)   Blend: Human beings (and their institutions) can be viewed as *dinosaurs that have a choice between extinction and survival, depending on their capability to change.*

d)   Inference: If humans and human institutions want to avoid extinction, they must adapt to changes.

Example (13) shows that this extinction argumentation pattern is indeed so familiar that it can even give rise to an inversion of the quasi-syllogism sketched above. The question of whether the "humble rock drummer" has become a *dinosaur* is decided on the 'negative' argument that 'as (all) the *dinosaurs* did not evolve, any creature that did actually evolve cannot be a *dinosaur'*. Given the information that the rock drummer did 'evolve' (in the new environment of "music's computer revolution"), it is inferred consistently that he cannot be a *dinosaur*. The strength of the underlying inference – 'if X is a dinosaur, then it is extinct or is going to be extinct, if Y does not want to become extinct it must avoid/stop being a dinosaur' – is such that it often need not even be spelt out (cf. also the assertion in example 6). In the following examples, for instance, the extinction outcome is only alluded to:

(14) Calthorpe is godfather to *The Crossings,* a 'transit-oriented community' of single-family residences and townhomes now rising on the site of the Old Mill shopping center […]. *As for the post-war suburbs, they're going the way of the dinosaur,* Calthorpe believes. (NU3--941104 - usnews/US)

(15) *Nuclear power is a dinosaur in the coming age of genuinely renewable energy.* Renewables such as wave and wind power offer major environmental benefits plus considerable job opportunities for Britain […] (MB2--990626 - newsci/UK)

To go the way of the dinosaur, or *to be a dinosaur,* or *to be referred to as a dinosaur:* all of these expressions evoke the scenario of a species of creatures going extinct just as specifically as the more explicit formulations in examples (1) - (5) and (10) - (13).

3. Extinct or not extinct?

Another group of examples, however, seems to use the *dinosaur* metaphor without any hint of the extinction outcome: the *dinosaurs* in question are deemed to be still *alive,* at least for the moment being. What seems to qualify the respective targets for their (dis-)qualification as *dinosaurs* are inordinate size, slowness, old age or outdated and atavistic attitudes:

(16) Like the Channel Tunnel, it could take decades for the investment to break even. Some say 50 years. For a start, SNCF, *a state dinosaur which employs 170,000 people,* has to fill 17 trains a day to and from Marseilles – the equivalent of 30 jumbo jetloads. (NB1--010524 - times/UK)

(17) But amid the inevitable champagne and self-congratulations sure to accompany tonight's celebrations for Britain's longest running musical [= *Cats*], perhaps it's worth pondering *whether this once seemingly frisky feline has now become a lumbering dinosaur.* (NB1--010511 - times/UK)

(18) *There is a dinosaur lurking in your house, and it goes by the name of VHS.* This was a rotten way of taping videos when it was invented, more than 20 years ago. Its superior rival at the time, Betamax, was trounced by better marketing […]. (NB1--010624 - times/UK)

(19) Female dons condemned yesterday the *'dinosaur' attitudes* of Oxbridge males who blanche at the behaviour of groups of drunken women in college. […] "Men have been drinking for years," Dr Evans said, "but *there are a lot of dinosaur attitudes lurking beneath the surface."* (NB1--011031 - times/UK)

None of these passages predicts or implies directly extinction for the *dinosaurs* in question. Instead, one or several other salient features of the dinosaur

stereotype are highlighted, usually with a negative slant, as being applicable to the respective target concepts. These features include being big, slow or having difficulty in moving, hiding (or lurking, as in examples 18 and 19) and being opposed to change. Does this mean the extinction outcome of the scenario is irrelevant here? Should it then be seen as an optional feature, of similarly accidental status as the particular circumstances of their demise that are also mentioned in some texts of the sample, such as, for instance, a meteorite crash (as a possible cause of their extinction) or the prominence of ancient tar-pits (as finding places of dinosaur fossils)?[5]

However, whilst the extinction aspect is not explicitly mentioned in examples (16) - (19), the strong negative bias of the features that are highlighted in these examples can be interpreted as containing implicit allusions to an extinction outcome. In (16), the 170,000 people strong, state-owned company SNCF, even if it is not yet actually extinct, apparently deserves such a fate from the perspective of *The Times*, as it is judged to 'break even' far too late or too slowly, after half a century. In (17) - (19), the topic referents, i.e. the musical *Cats*, VHS videos and male chauvinists are all presented under the perspective that they could be expected and indeed should have died out long ago. Example (18) in particular makes the point that their survival - in the face of the failure of the "superior rival" is abnormal. *Being a dinosaur* is not a good, desirable, promising thing or prospect. If someone survives as a *dinosaur*, it is as a monstrosity. For this reason, attributing *dinosaur* status to somebody can also function as an insult, e.g. in:

(20) Ellery Hanley [accused] the board of directors […] of being "*rude, ignorant and dinosaur-like*". (NB1--990721. - times/UK).

The pejorative slant of judging someone *to be* or *become a dinosaur* would hardly be explicable without an implicit relation to the extinction outcome. The alleged features of enormous size, slowness, stupidity and outdatedness etc. of metaphorical *dinosaurs* are viewed as significant not just because they may be vaguely negative in themselves but specifically because they can

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[5] Cf. for instance, the examples: "Flannery has set himself an almost impossible task […]. Does he succeed? Yes he does, *and at a speed that comes close to that of the dinosaur-killing asteroid*" (NB1--010606 - times/UK); "Invading Baghdad to topple Saddam Hussein would have bogged down the United States in a quagmire '*like the dinosaur in the tar pit,*' according to *Desert Storm* commander H. Norman Schwarzkopf" (NCX--92---3 strathy/CA Sun 20 Sep 92).

trigger, or at least contribute to, the catastrophic consequence of extinction. It is not just uncomfortable or awkward to be a dinosaur; it is dangerous. The allegedly typical *dinosaur*-features make a *dinosaur*-outcome, i.e. extinction, more likely. The background narrative of evolution as a story of extinction and survival provides a basis to infer a relevance of features such as slowness etc. as being able to tip the balance towards a catastrophic outcome.

Even the most 'positive' or assertive examples of metaphorical *dinosaur* references in the corpus are not free from this sense of foreboding or impending catastrophe. There are, for instance, reports about people who acknowledge that their own life-style or specific attitudes may be dinosaur-like obsolete from the viewpoint of others but who nevertheless still cling on to them:

(21) *When it comes to everyday banking, Hilary accepts that she is an absolute dinosaur.* She is not interested in managing her finances over the Internet, preferring to visit local branches of the Halifax and Royal Bank of Scotland. (NB1--010929 - times/UK)

(22) When I arrived, there was a push-bike leaning against the polytunnel and a man inside with straight hair cut to chin-level, a beard and specs. *"I have been told I am a dinosaur," he said, a trifle sadly, but he seemed too gentle to have fierce opinions.* He and his wife, Anne, were weeding and pinching out tomatoes [...]. (NB1--990731 times/UK)

(23) King is still worried about the legal threats posed by Lewis, HBO, Kushner and their batteries of lawyers. *"I'm a dinosaur," he said. "I'm going to be extinct soon. How long? Not long."* (NB1--010515 - times/UK)

In these examples, as in the preceding ones, there is an implicit evaluative assumption along the lines that the respective behaviour or attitude should 'normally' be extinct or discontinued. It is not necessarily negative in itself (at least from the viewpoint of the respective speakers who give such a self-description), but whatever its merits and weaknesses it has survived so far 'against all the odds'. The scenario participants in examples (21) and (22) to 23) excuse themselves for being dinosaurs, with "Hilary" in (21) clearly more assertive than the gentle, bearded naturalist in (22). Mr. "King" in (23) is resigned to being a *dinosaur,* and even to *being extinct soon,* apparently without wishing to do much about it. The *dinosaur*-status as referred to in these examples is by no means seen as an ideal position to be in, even if there may have been some justification for the respective target-attitudes in the first

place. If the metaphorical *dinosaurs* manage to prolong their survival/existence, such an exception only serves to confirm the rule (as an exception). What we have here is in fact a special version of a humanised, reflecting *dinosaur* pondering her/his fate, which we encountered in the initial examples. Not only has the *dinosaur* got a choice, s/he may deliberately hold out against the changes in the environment, fighting, as it were, for a 'lost cause'.

The extinction outcome of the *dinosaur* scenario thus has been shown to form part of the background assumptions of metaphorical uses of dinosaur concepts even in cases where the explicitly asserted blended space contains *dinosaurs* that are still 'alive and kicking', and that have no intention of dying or that do not mind being threatened by extinction. The scenario, including its 'typical' participants and its 'typical' outcome, serves as a set of presuppositions, i.e. implications of an epistemic status that differs from that of logical "conclusions" or "entailments" (that follow from "premises" in a syllogism). As a presupposed meaning aspect, the scenario outcome is semantically cancellable, i.e., it can be negated, queried or otherwise epistemically modified (Stern 2000: 107-143; Leezenberg 2001:195-238). Cases of 'surviving' *dinosaurs* in explicit statements therefore do not constitute counter-examples to the *dinosaur* scenario and its default outcome. Instead, it is precisely on account of this presupposition that they can be understood as special, exceptional cases. The extinction outcome is an integral part of the set of presuppositions that are essential to the *dinosaur* scenario.

This conclusion corrects the statement in Musolff (1999: 290) that "the extinction scenario is an optional element of the source domain meaning", and not present, for instance, in cases where active politicians are criticised or lampooned as *dinosaurs* or refer to themselves as *dinosaurs*, apparently on account of their long term of office or activity. On the present interpretation, such statements about the continued existence or activity of the *dinosaur-*individuals presuppose the extinction outcome for the same reason as the *Bank of English* examples, i.e. that no (self-)critical inferences would be accessible, were it not for the assumption that the survival of a dinosaur constitutes an exception to the rule. Even contradictions of the extinction outcome at the source level, on the basis of a changed understanding of evolution that recognizes the longevity of dinosaurs in terms of evolutionary history, still

presuppose the default outcome. Thus, instead of viewing dinosaurs as creatures that did not evolve and for this reason went extinct, journalists can assert the fact that the dinosaurs did indeed evolve and had a very long existence in evolutionary time - and they can make this the basis of their references and inferences, as in the following simile:

(24) Dinosaur books used to cover a broad range of the big beasts. *Now, much like dinosaurs during their 170-million-year reign* […], the books concerning them are evolving swiftly to fill specialised niches. (MB2--981219 - newsci/UK)

In this example "dinosaur books" are praised for being as 'evolutionary successful' as the protagonists of the stories they contain. The simile explicitly negates the default scenario in which the dinosaurs go extinct because they are unable or unwilling to evolve, which seems to make the default extinction scenario is irrelevant. However, the conceptual blend of the topical information that dinosaur books 'evolve to fill specialized niches' and the reference to the pre-historic creatures derives its significance from the fact that, contrary to what is assumed as the "commonplace" scenario of the non-evolving dinosaurs, the latter's evolution was in fact a success story. (Presupposed) knowledge of the commonplace default scenario is required to understand the specific inference intended in (24), i.e. that dinosaur books provide surprisingly specialised information about the surprisingly adaptable 'real' dinosaurs. Without the default outcome, the statement would be insignificant; its inferences would be that 'dinosaur books evolve just like dinosaurs (and all other creatures)'. The point of the journalist's statement is, however, that such books no longer just 'cover a broad range' but contrary to make the default extinction scenario irrelevant evolve in a surprisingly similar way to the dinosaurs during their 170-million-year reign. The fact that expectations can be disappointed and contradicted - both for books as for dinosaurs - does not mean there are no expectations.

4. Metaphor scenarios and pragmatic effects

The examples in this preliminary survey of the corpus sample appear to provide some evidence for hypotheses about the epistemic status and structure of the source input in metaphors and similes used by the media. The most important result is that the source concepts in the corpus of journalistic metaphors do not come in bits and pieces nor in purely schematic conceptual

frames; rather, they are always already integrated into conceptual "scenarios" with an ontologically relatively rich, narrative structure. As a narrative, the source scenario leads the hearer towards a default outcome, which may be used to derive a moral – even moralistic – conclusion. The default outcome of *dinosaur* metaphors is extinction, understood in terms of a non-expert interpretation of evolution in terms of a succession of species. This extinction outcome is usually linked to a set of stereotypical attributes of the prehistoric animals, i.e. that they were very big, slow, not quick-witted and, crucially, failed to adapt to changing conditions in their environment. In melodramatic, moralistic presentations of the scenario, as exemplified in the fable-like examples (cf. above, 4, 5, 11, 12, 17, 19, 22, 23), the failure to adapt is interpreted as a 'culpable' lack of concern or even disdain for one's own species' survival.

We can summarise the scenario structure in the form of a table (cf. below). It is meant to be a representation of the conceptual range of the metaphor texts in the corpus; it can neither claim to be a 'psychologically real' nor a 'logically necessary' structure. This proviso is not an argument against the psychological or (onto-)logical status of *dinosaur* metaphors, but only states the obvious limitation of the data presented here, namely that corpus data in themselves do not provide direct evidence for deciding logical or psychological questions. Whether metaphor scenarios should be assumed in psychological accounts of metaphor has to be decided on the merits of empirical, i.e. also experimental research; and any answer to the question of which role conceptual scenarios play in a comprehensive theory of metaphor and other blending operations depends largely on the premises of specific theoretical systems. The heuristic value of the "scenario table" lies only in summarising the minimal set of presuppositions that are required in the semantic and pragmatic reconstruction of the metaphorical senses of the corpus texts. The table is divided into two tiers, to separate the input level from that that of the metaphorical blending and the inferences drawn from it. In the first tier, we find the 'raw' source and target input aspects that appear in the corpus data. The second tier comprises the 'blended' narrative, plus the most immediate inferences that are built on it.

Scenario Table

I) INPUTS	SOURCE INPUT	TARGET INPUT
	Dinosaurs (= group of animals that existed millions of years ago)	Institutions (e.g., *public institutions:* Police, National Association for the Advancement of Coloured People, Political Party; *Companies:* Marks & Spencer, Unilever, "Varsity" cinema; *social developments:* postwar suburbs, nuclear energy, rock drummer, dinosaur books, people with old-fashioned beliefs/attitudes/practices)
MATCHING ATTRIBUTES	Huge body size, relatively small brain	Large organizational structure, incompetent management
	Slow physical movement	Slow/lacking initiative in innovation or implementing reforms
	Could not adapt (fast enough) to changing environment	Unable or unwilling to adapt to changing socio-economic or cultural environment
	Extinction	Possible extinction
II) BLEND	SCENARIO: *Dinosaurs have a choice between extinction or survival (at the cost of adaptation to change), and they can contemplate or discuss that choice*	
INFERENCES	EVALUATIVE INFERENCE: *As dinosaurs have a choice, they are responsible for (the prevention of) their own demise; hence if they do not adapt they have mainly themselves to blame for their extinction*	
	PREDICTIVE/COMMISSIVE INFERENCE: *Dinosaurs need to adapt to changes in their environment*	

According to the interpretation presented here, the default extinction outcome is conceptually present as a background presupposition even in cases where the topic referents designated as *dinosaurs* are said not to be extinct, or to have no intention of going extinct, or are even assumed to be able to avoid extinction on account of their adaptive success (example 24). The chief reason for this claim is that the inferential structure of the respective texts would not be comprehensible without a background assumption that 'by rights' these *dinosaurs* 'ought' to be extinct. It is this assumption that makes the respective texts relevant as speech acts, e.g. as accusations, insults, warnings, excuses, defiant statements or just 'newsworthy' information. It is not necessary to

assume a firm belief that all the dinosaurs actually went extinct - give or take the odd Loch Ness monster - in order to be able to refer metaphorically to them. However, it is necessary to make the assumption that 'normally' they should be extinct to be able to understand the 'surprise' effect of the revelation that a *dinosaur* exemplar of one kind or another has been found to exist in some evolutionary niche.

This background scenario - and its exceptional violation - seems to me to be one of the main factors that make *dinosaur* metaphors attractive to use for journalists in the first place. They can rely on an 'entrenched', albeit vague commonplace of dinosaur extinction as a salient event in evolutionary history as part of their readers' popular knowledge. This background scenario serves as a counterfoil for all kinds of more or less fantastic secondary mini-stories such as those of *dinosaurs* deliberating on which evolutionary course of action or attitude to choose. If *dinosaur* metaphors continue to evolve the way they have done so far – i.e., keeping their recognisable if vague default core scenario whilst allowing for maximum secondary modification – they, too, may defy their source referents' fate and have a prosperous future ahead of them.

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