

Deliberate metaphors? An exploration of the choice and functions of metaphors in US-American college lectures

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Abstract

In this paper, we discuss the notion of deliberate metaphor use (cf. Steen 2011a) in academic discourse. In three college lectures, we analyze different kinds of metaphors (direct and indirect metaphors, novel and conventional metaphors) that are potential candidates of deliberate metaphor, in order to reveal how we can identify deliberate metaphors and what purpose they serve in academic discourse. Our analysis points out that deliberate metaphors are a powerful tool for professors who try to offer their students a new and scientific perspective on abstract concepts. However, we cannot give a general answer to the question how deliberate metaphors can be identified in discourse, since this seems to depend on the particular discourse context.

In diesem Beitrag wird der Begriff der gezielten Metapher ('deliberate metaphor', vergleiche Steen 2011a) im Kontext des Hochschuldiskurses erörtert. In drei Kurssitzungen an einem amerikanischen College analysieren wir verschiedene Arten von Metaphern (direkte und indirekte Metaphern, neuartige und konventionelle Metaphern), die potentielle Kandidaten gezielter verwendeter Metaphern darstellen. Anhand dieser Analysen soll aufgezeigt werden, auf welche Weise gezielte Metaphern identifiziert werden können und welchen Zweck gezielter Metapherngebrauch im Hochschuldiskurs erfüllt. Unsere Untersuchung stellt heraus, dass gezielte Metaphern ein nützliches und effektives Werkzeug für Professoren darstellen, die versuchen, ihren Studierenden eine neue und wissenschaftliche Sichtweise auf abstrakte Konzepte zu eröffnen. Wir können jedoch keine allgemeine Antwort auf die Frage geben, wie gezielte Metaphern im Diskurs identifiziert werden können, da dies stark von dem spezifischen Diskurs-Kontext abhängt.

1. Introduction¹

Recent research in metaphor identification procedures for metaphors in discourse (Steen et al. 2010a, 2010b) has sparked a new interest in deliberate metaphor (see Gibbs, in press; Müller, in press; and Steen 2011a, 2011b; Steen et al. 2010b). The notion of deliberate metaphor is not new, though. For educational discourse, Cameron (2003: 119) has already pointed out that

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deliberate metaphors support the understanding of concepts that are rather unfamiliar to the students. However, Cameron's understanding of the nature of deliberate metaphor differs from Steen's more recent definition of deliberate metaphor use. While Cameron (2003: 100-102) defines deliberate metaphor in opposition to conventionalized metaphor, Steen's (2011a: 13-16) definition of deliberate metaphor emphasizes the communicative dimension of metaphor.

In his three-dimensional model of metaphor, Steen (2008) differentiates between the linguistic, the conceptual and the communicative dimension of metaphor. In the linguistic dimension, we can contrast *direct* and *indirect metaphors*. Direct metaphors explicitly contain a cross-domain mapping in language, as it is typically the case in analogies and similes like "the mind works like a computer". In this example, the two domains, MIND and COMPUTER are directly compared. However, in cases of indirect metaphors like "He attacked my argument", for example, the domains ARGUMENT and WAR are not directly compared in language. In the conceptual dimension, Steen (2008: 215) asserts that metaphors can be based on conventional mappings between conceptual domains, such as TIME and MONEY. These metaphors are called *conventional metaphors*. In contrast to conventional metaphors, *novel metaphors* create new mappings between conceptual domains. Instances of novel metaphors from our data would, for example, be those metaphors that compare a sperm type to a type of American football players. In the communicative dimension, Steen (2008) differentiates between *deliberate* and *nondeliberate metaphors*. Steen provides the following definition of deliberate metaphors:

A metaphor is used deliberately when it is expressly meant to change the addressee's perspective on the referent or topic that is the target of the metaphor, by making the addressee look at it from a different conceptual domain or space, which functions as a conceptual source. (2008: 222)

Steen (2010a: 17) argues that although novel metaphors and direct metaphors are typically deliberate, deliberate metaphors can also be conventional and indirect. Even though Steen's delineation of deliberate metaphor moves us away from Cameron's rather problematic opposition of deliberate vs. conventional metaphor, it is still unclear how we can identify 'deliberateness'. According to Steen's description, instances of direct metaphor and novel metaphor always seem to be cases of deliberate metaphor. These instances of

deliberate metaphor can be identified rather reliably. However, we do not know in which case an indirect or conventional metaphor counts as deliberate.

The lack of necessary and sufficient features to identify all instances of deliberate metaphors in discourse led to this exploratory study of the use and function of metaphors in academic discourse. For metaphor investigations in academic discourse, deliberate metaphor is of particular interest, since metaphors that are used deliberately urge “the addressee to momentarily adopt another standpoint, in another frame of reference, and to reconsider the local topic from that point of view” (Steen 2011a: 16). In academic discourse, deliberate metaphor seems to be a powerful tool. Not only can professors convey abstract and/or novel concepts to students by using more concrete and/or familiar concepts as source domains, but students can also be invited to consider a familiar concept from an unfamiliar and/or scientific perspective.

In our study, we closely examine definite and potential cases of deliberate metaphor in three college lectures in order to find out what functions the metaphors serve in their respective discourse situations. Throughout the paper, the central question is how we determine whether or not a given metaphor in our lectures is used deliberately. We will do so by analyzing different examples of metaphor, ranging from direct to indirect and from novel to conventional.

2. Corpus

This exploratory study analyzes the metaphor use in three Psychology lectures. These lectures are taken from a specifically compiled corpus of academic discourse for which 25 class meetings in four different subjects (Biology, Chemistry, Philosophy and Psychology) were filmed at an American liberal arts college. We selected three lectures in three different Psychology classes for our exemplary analysis of different forms of deliberate metaphors. The first lecture is given in a Social Psychology class with an audience of ca. 50 students who are at an intermediate level. The topic of this lecture is *aggression*. The second lecture is on *mating strategies*. It is given by the same professor, but in an Evolutionary Psychology class. The approximately 20 students in this class are at an advanced level. The third lecture also involves about 20 students at an advanced level of Psychology studies. However, this

lecture is given by a different professor in a different class. The lecture is given in Clinical Psychology and its topic is *eating disorders*.

While the lecture on aggression comprises the least interaction between students and professor, the two smaller classes involve more talking on the part of the students. Still, even in the two classes that have a slightly increased interaction, the professor speaks for long stretches of the class time, while the students' contributions are often rather short. Thus, we considered all three lectures to be predominantly lecture-based in their communication style. The duration of the lectures varies from 64:36 to 85:06 minutes. In total, the analyses presented here are based on 3 hours and 40 minutes of recorded class time. For the identification of metaphors, the three lectures were completely transcribed. The number of words varies between 9,570 in the aggression lecture and 10,926 words in the lecture on mating strategies. Altogether, the transcriptions constitute a corpus for this study that comprises 31,121 words. The basic data of each lecture is summarized in table 1.

Table 1. Basic data of the three lectures

| Lecture | Aggression | Mating | Eating |
|----------|--------------------|-------------------------|---------------------|
| Class | Social Psychology | Evolutionary Psychology | Clinical Psychology |
| Topic | Aggression | Mating strategies | Eating disorders |
| Level | 200 (intermediate) | 300 (advanced) | 300 (advanced) |
| Duration | 64:36 min | 85:06 min | 70:03 min |
| Words | 9,570 | 10,926 | 10,625 |

3. Method

In order to examine the use and the function of metaphorical expressions in academic discourse, we have to analyze the metaphors on the one hand, and the specific discourse situation in which they occur on the other hand.

3.1 Methodological issues concerning metaphor

When we analyze metaphors in authentic discourse, we first of all need a reliable method to identify these. Currently, one of the most reliable methods for the identification of metaphor in discourse is the Metaphor Identification Procedure (MIP) devised by the Pragglejaz Group (2007). We used the MIP as a general guideline in our metaphor identification process. This means that we adapted the MIP to our language data and to our goals of analysis. The following steps of analysis were taken: We first determined the lexical units of the discourse text (MIP, step 2). Since we consulted the Macmillan Online Dictionary throughout the metaphor identification process, we also determined the lexical units in accordance with it. This means that we considered every headword a lexical unit, including phrasal verbs. In the second step of the identification process, the contextual meaning of each lexical unit was established and, when applicable, compared to the more basic meaning of a given lexical unit (MIP, step 3a, 3b). We considered the lexical unit as metaphorically used when the contextual meaning contrasted with the more basic meaning, but could be understood by means of comparison (MIP step 3c, 4).

Unlike the MIP, though, we included similes and other forms of comparison as instances of metaphor. In a refinement of the MIP, called the MIPVU, Steen and his colleagues (2010a: 10-12) point out that the cross-domain mapping is one of the most important characteristics of metaphor. Since similes and analogies feature a cross-domain mapping, albeit an explicit one, Steen and his colleagues (*ibid.*) argue that these are instances of direct metaphors². It is in fact this group of direct metaphors that Steen and his colleagues (2010b: 786) claim to be “almost by definition deliberate”. Thus, instances of direct metaphors were identified following the instructions of the MIPVU (Steen et al. 2010a: 38-39) and marked as such for further analysis as instances of deliberate metaphors.

While direct metaphors are not only very probable candidates for deliberate metaphors but also relatively easy to identify with the MIPVU (*cf.* Steen et al.

² In opposition to direct metaphors, indirect metaphors constitute the „classic“ category of metaphor. In examples like *He was fuming*, there is no explicit mapping between ANGER and A HOT FLUID IN A CONTAINER. Instead, the target domain ANGER is indirectly understood in terms of the source domain HOT FLUID IN A CONTAINER.

2010a: 38-39), there is a lack of a general procedure to identify other instances of deliberate metaphor. As we mentioned above, there is in fact no clear definition of deliberate metaphor and it still needs to be established when a metaphor really is used deliberately. In order to explore and discuss this question during the remainder of this paper, we carefully searched our corpus data for possible candidates of deliberate metaphor in addition to instances of direct metaphor. This process included that we established whether a given metaphor was novel or conventional. For this step of analysis, we relied on our competence in the English language and asked native speakers in unclear cases. Following Steen's definition of deliberate metaphor which claims that novel metaphors are typically used deliberately (Steen 2011a: 17), we marked novel metaphors in our data as instances of deliberate metaphor. Furthermore, we paid special attention to metaphor clusters, that is, stretches of discourse in which metaphors accumulate. If an accumulation of indirect and conventional metaphors that share a single source domain was found, these metaphors were marked as potential cases of deliberate metaphor. Similarly, we marked metaphors as potentially deliberate when few different linguistic metaphors sharing a source domain occurred at one point of the discourse text and were then repeated later in 'crucial' episodes of the lecture.

The notion of 'crucial' episodes of a lecture brings us to another methodological issue to consider when we investigate the use and function of metaphor in academic discourse: The particular discourse structure itself.

3.2 Methodological issues concerning the discourse structure

It does not come as a surprise that academic discourse is quite metaphorical, since most topics dealt with in academic discourse are of abstract nature. In fact, Steen and his colleagues (2010: 781) show that, compared to three other genres including news and even fiction, academic discourse features the highest proportion (17.5%) of metaphor-related words. The topics of the three lectures under investigation are quite abstract, ranging from mental disorders to emotions. We might therefore expect the discourse to be quite metaphorical throughout the lectures. This is, however, not the case. On the contrary, we find stretches of discourse in which no or hardly any metaphors are used and we also find episodes in the lectures which show a sudden increase of metaphors. A closer look at the discourse structure revealed that despite their

overarching abstract topics, there are several sub-units of the lectures that may or may not deal with abstract concepts.

To further explore this phenomenon, we divided each lecture into functional sub-units. Typical sub-units in our lectures include, for example, research study descriptions and exemplifications from the professor. These two units usually involve descriptions of perceivable and concrete events and experiments. Consequently, there is not a great need for metaphor to express an abstract concept in terms of a more concrete one. This is quite different in discourse episodes in which the professor explains new concepts or theories or draws conclusions.

We stated earlier that one of the characteristics of deliberate metaphor is that it forces the addressee to consider a local topic from a new perspective. We also argued that this is particularly important in academic discourse when new concepts are communicated or familiar concepts are supposed to be reconsidered from an unfamiliar perspective. According to our data, new and abstract concepts or unfamiliar perspectives are usually introduced in the lectures' sub-units that we labeled *Conclusion*, *Explanation*, *Results* and *Theory* (see table 2 for a definition of these and all other sub-units we identified). Therefore, our search for potential candidates of deliberate metaphor that are neither direct metaphors nor novel metaphors focused on metaphors identified in these four sub-units.

Table 2. Names and descriptions of discourse units

| Name of Discourse Unit | Description |
|------------------------|--|
| Class Business | Professor talks about class business, for example upcoming tests or presentations. |
| Structuring | Professor structures the discourse, for example by saying "And I'll give you some data on this in a minute". |
| Example | Professor provides an example for a theory or concept. |
| Explanation | Professor explains a concept or an idea. |
| Theory | Professor explains a scientific theory that is labeled |

| | |
|-------------|--|
| | as such, not just a concept or a hypothesis. |
| Description | Professor describes how a study was set up or carried out. |
| Results | Professor states the results of the particular study he described before. |
| Conclusion | Professor draws a conclusion from what was said earlier. |
| Summary | Professor summarizes examples, research studies, results, etc. |
| Transition | Professor leads over to the next topic. |
| Interaction | Professor and students interact with each other. |
| Comment | Professor makes a personal comment on something or evaluates a topic by revealing his personal opinion about it. |
| Definition | Professor provides a definition of a technical term. |
| Ending | Professor ends class. This is usually very short and done in one or two sentences. |

4. Results: Examples of different forms of deliberate metaphors

In this section, we illustrate and discuss different potential candidates of deliberate metaphor. We start with an example in which we contrast the use of indirect metaphor with that of similes (4.1). In the following subsection (4.2) we consider reoccurring indirect metaphors as potential cases of deliberate metaphor. A special form of reoccurrence is a metaphor cluster, in which metaphors which share a single source domain accumulate. A metaphor cluster that builds on an analogy will be discussed as a candidate for deliberate metaphor in subsection 4.3. We will finish our results section by looking at one last candidate of deliberate metaphor in subsection 4.4: A conceptual metaphor that is locally established and even used by a student in an interaction episode of the lecture.

4.1 Similes

In our first example (1) we want to discuss the case of indirect metaphors that happen to be metaphorical technical terms and compare their deliberateness to rather clear examples of deliberate metaphor: Simile. Similes are instances of direct metaphor which is by definition almost always a deliberate metaphor. In example (1), this seems to be exactly the case. The example is taken from an *Explanation* sub-unit of the *Mating* lecture. About seven and a half minutes before example (1) takes place, the professor introduced the concept of ‘sperm competition’. From then on, he explained and exemplified different phenomena that attest the presence of a sperm competition. In example (1), he explains two different types of sperm and their function in the mating process and concludes that the second type of sperm is evidence for the existence of sperm competition³.

- (1) “There appear to be two different types [of sperm]. The egg getters and what they call *kamikaze* sperm. The egg getters are the sort of *racehorses* of the sperm world. They’re built for speed and their goal is to get to the egg to fertilize it. On the other hand there are these other sperm that have these kind of curly tails, and they’re a little more slow moving and erratic and they don’t seem to have much of a chance of fertilizing an egg. Their main reason for existence appears to be, to be kind of like *offensive linemen*. They **block** sperm movement by other guys’ sperm. They’re left behind by faster sperm of the guy they come from, but they kind of *hang back* and **block** other sperm from being able to travel. So why would this kind of sperm even exist if there wasn’t sperm *competition* going on?”

The first metaphor in example (1), *kamikaze sperm*, is not a simile. Instead, the professor starts out by using an indirect metaphor that is signaled by the phrase *what they call*. Originally, the word *kamikaze* refers to suicide attacks of Japanese pilots during World War II. The basic sense of the word *kamikaze* can thus be described as a suicidal action for a ‘greater good’. The individuals performing this action do (obviously) not benefit from the result of their action. The contextual meaning of *kamikaze* is not as easy to establish at this point in the discourse, though. What we can infer from the context so far is

³ In all examples, only the relevant potential candidates of deliberate metaphors are highlighted in bold and italics. The lexemes signaling metaphor are underlined.

that their goal does not seem to be the fertilization of the egg, since that is the purpose of the other type of sperm. By transferring our knowledge of the basic sense of *kamikaze* to sperm, we can infer that the *kamikaze sperm* is not supposed to survive and fertilize the egg, but to help the *egg getters* accomplish this goal. However, this contextual meaning becomes more apparent when the discourse unfolds and the professor elaborates on the two different kinds of sperm. Although the term *kamikaze sperm* is a technical term in psychology and biology, it constitutes a new concept to the students. The term *kamikaze sperm* is metaphorical in itself and although the professor has not just coined a novel metaphor, for the students (and for the average person) *kamikaze* is certainly not a conventional way to conceptualize a sperm type. The question that arises here is whether or not a technical term can be a deliberate metaphor. On the one hand, the professor doesn't have much of a choice but to use the technical term in this context, which might argue against a deliberate use on the side of the professor. Instead of deliberately comparing the purpose of a sperm type to that of a kamikaze fighter, *kamikaze sperm* is simply the proper way to refer to this particular sperm type. On the other hand, the metaphor *kamikaze* in the context of sperm types is probably a novel way for the students to think about sperm and it is very likely that the students will realize that *kamikaze* is a metaphor. Interestingly, though, the professor does not elaborate on the *kamikaze* metaphor during the rest of the episode but brings in a new metaphor that compares this sperm type to a certain type of football player. Before we discuss this in more detail, let us consider the metaphor the professor uses for the other type of sperm.

The second metaphor in example (1) that is a candidate for deliberate metaphor is *the egg getters are sort of racehorses*. This is a case of simile where the more abstract domain of A SPERM TYPE IN SPERM COMPETITION is explicitly compared to the more concrete domain of A TYPE OF HORSE IN A RACE. This comparison is established in a direct way by the phrase *sort of*. The professor seems to use this metaphor deliberately to let the students think of this sperm type in terms of race horses. In the next sentence, the professor also explicitly states what characteristic of race horses the students are supposed to map onto the domain sperm: The speed.

The third candidate for deliberate metaphor in example (1) is also a form of simile. This time, the lexemes *kind of / like* introduce a direct comparison

between the purpose of a certain sperm type and the goal of offensive linemen in American football. In American football, (interior) offensive linemen are not supposed to ever catch the ball in a forward pass of their team, although the general goal of this game is to advance with the ball on the field. The purpose of an offensive lineman is to keep the players from the opposing team out of the way of those players who are actually supposed to advance the ball into the opposing team's end zone. The purpose of the type of sperm earlier referred to as *kamikaze sperm* can be understood by comparison to the goal of an offensive lineman in American football. This sports metaphor is further elaborated by an indirect metaphor in the next sentence: The goal of this sperm type is to *block* sperm belonging to a different male, just like an offensive lineman blocks the players of the opposing team. How exactly this works is described in even more detail in the next sentence, in which the professor uses a simile again.

In the case of the simile *they kind of hang back and block other sperm*, the comparison is made explicit by the words *kind of*. We assume that *kind of* introduces a simile here because there is a comparison between the sperm movement and a human being, or more specifically a football player, involved. However, we have to be careful with markers like *kind of*, since they can also merely mark a subcategorization, exemplification, resemblance and the like (cf. Low 2010: 293). It is also interesting that the professor exploits the source domain AMERICAN FOOTBALL over the course of three sentences. Since AMERICAN FOOTBALL is a familiar concept to the students, this source domain seems to be quite effective as well as productive in that it offers several mappings onto the target domain SPERM MOVEMENT. The professor seems to regard it as helpful for his explanation of the movement of the second type of sperm. Indeed, the professor seems to regard the football metaphor as more helpful in understanding the purpose and characteristics of the *kamikaze sperm* than the *kamikaze* metaphor itself. The fact that he does not elaborate on the *kamikaze* metaphor, but instead offers a completely novel metaphor for this sperm type and develops this in some detail, indicates that the *kamikaze* metaphor at the beginning of this discourse episode might actually not be used deliberately.

In contrast to the simile we discussed previously, the last candidate of deliberate metaphor in example (1) is an instance of indirect metaphor. In the

metaphorical utterance sperm competition, the professor does not make a direct comparison between the abstract domain of SPERM MOVEMENT and the more familiar domain of (SPORTS) COMPETITION. Furthermore, the metaphor *sperm competition* is a conventional metaphor. Since the professor uses sport competition metaphors deliberately throughout the discourse episode illustrated in example (1), we might infer that *sperm competition* is a deliberately used metaphor that kind of summarizes the comparisons between SPERM MOVEMENT and SPORTS COMPETITIONS that the professor has drawn up to that point. Yet, it is the case that the professor introduces the technical term *sperm competition* seven and a half minutes before example (1) occurs in the lecture. This suggests that the technical (and metaphorical) term *sperm competition* was actually the initiation for the professor to elaborate this metaphor by the more specific deliberate metaphors with the source domains HORSE RACES and AMERICAN FOOTBALL that we discussed above. The professor's use of the metaphor *sperm competition* at the end of example (1) therefore seems to be non-deliberate. He simply refers back to the technical term introduced earlier after he illustrated – with the help of deliberate metaphors – how we can understand sperm movement in terms of a competition.

The analysis of the metaphors used by the professor in example (1) demonstrates the function of deliberate metaphor in the *Mating* lecture. The professor communicates abstract concepts (the purposes of different types of sperm and how these are achieved) by directly comparing these concepts to domains that are familiar to the students: HORSE RACING and AMERICAN FOOTBALL. With this explicit comparison in form of simile, the professor forces his students to understand the characteristics of the *egg getters* sperm types in terms of the characteristics of a racehorse. Furthermore, the use of multiple direct metaphors for the *kamikaze* sperm types' purpose of existence and how *kamikaze* sperm move to achieve this goal, the professor urges the students to understand these new concepts in terms of a familiar concept: Offensive linemen whose goal it is to block the players of the opposing team in a competition. By using these deliberate metaphors, the professor offers the students familiar perspectives to understand what happens during a complex process that the students cannot perceive without a microscope.

4.2 Reoccurring metaphors

In the previous subsection, we saw how the professor of the *Mating* lecture deliberately uses metaphors that we could subsume under the conceptual metaphor MALE MATING EQUIPMENT IS EQUIPMENT FOR A COMPETITION. The professor used this metaphor in order to convey a particular local topic to the student audience. Most of the metaphors discussed in subsection 4.1 are unambiguous cases of deliberate metaphor simply by virtue of being instances of direct metaphor. A direct comparison between two domains can hardly be non-deliberate. In this subsection, we look at the *Mating* lecture as a whole and consider reoccurring indirect metaphors as candidates for deliberate metaphor.

If we look at the whole lecture on mating strategies, it soon becomes clear that even the metaphor MALE MATING EQUIPMENT IS EQUIPMENT FOR A COMPETITION would only be an entailment of a very general conceptual metaphor that we might call MATING IS A COMPETITION. Some very specific metaphors that conceptualize MATING as A COMPETITION at the sperm level have already been illustrated in the previous subsection. A multitude of similar metaphors that conceptualize MATING as A COMPETITION on a different level can be found throughout the lecture. This is exemplified by examples (2) to (4) which occur at different times during the lecture. Example (2) is uttered by the professor approximately 7 minutes after the beginning of the lecture. It occurs during the discourse sub-unit we labeled *Transition*. Example (3) occurs later in the lecture, after 36 minutes and 30 seconds, when the professor draws conclusions about male and female mating strategies. Example (4) is uttered by the professor shortly thereafter. In this *Explanation* sub-unit, he explains a particular type of person that needs mating for his or her self-esteem.

- (2) “Given all the nasty things we’ve said about men, why would they engage in long-term mating *strategies* at all?”
- (3) “Alright, so, you can see why the *battle* of the sexes has become such a standard plotline in stories, movies, whatever, because men and women do have different *strategies*. (...) Women on the other hand are going to be more interested in long-term commitments, but in order to acquire that, that sometimes means *playing the game* of pretending to be interested in short-term commitments.”

- (4) “There’s a personality profile called hostile masculinity which is kind of a cluster of things like getting self-esteem from sexual *conquests* (...).”

The highlighted metaphors in examples (2) to (4) all share the features of indirectness and conventionality. Furthermore, all of these linguistic metaphors can be subsumed under the conceptual metaphor MATING IS A COMPETITION. Sometimes the sexes seem to compete in a game (*strategies, playing the game*), sometimes in a war (*strategies, battle, conquests*). Additionally, the topic of the lecture, *mating strategies*, is metaphorical itself. This might indicate that metaphors relating to competition are not deliberate, but inevitable when the professor talks about mating *strategies*. It is however the case that a second conceptual metaphor is used by the professor throughout the lecture, sometimes even in combination with, or in close proximity to, the metaphor MATING IS A COMPETITION. We call this other conceptual metaphor MATING IS AN ECONOMIC EXCHANGE. Linguistic metaphors instantiating this conceptual metaphor are also indirect and conventional. We find instances of both conceptual metaphors frequently and repeatedly throughout the lecture on mating strategies. This suggests that the professor applies linguistic metaphors belonging to MATING IS A COMPETITION or to MATING IS AN ECONOMIC EXCHANGE with a certain degree of deliberateness, since they highlight quite different aspects of the mating process. The professor might use the respective metaphors to urge the students to consider mating from different perspectives that are important in psychology.

Another reason to consider the use of instances of the metaphors MATING IS A COMPETITION and MATING IS AN ECONOMIC EXCHANGE as deliberate is the fact that the professor uses several different linguistic metaphors that share the same source domain (either COMPETITION or ECONOMIC EXCHANGE). This is exemplified by the four different metaphors in examples (2) to (4) which all share the source domain of COMPETITION. Each of these linguistic metaphors maps different aspects of COMPETITION onto the source domain MATING. This might help the students better understand MATING in terms of COMPETITIONS and ECONOMIC EXCHANGES. While both source domains are familiar to the students, they might give them a new perspective on the target domain MATING. We argue that the repetition of the same two conceptual metaphors throughout the lecture and the fact that they are realized by several different linguistic metaphors might be indicators of deliberate use. The professor

seems to deliberately convey the concept of MATING in terms of COMPETITION and ECONOMIC EXCHANGE in order to highlight certain aspects of the mating process.

4.3 Local metaphor clusters and analogy

In subsection 4.1, we discussed a local cluster of metaphors which illustrated in greater detail what the professor meant by the metaphorical concept *sperm competition*. In that case, most deliberate metaphors were direct metaphors in the form of simile. In this section, we show an example (5) of a very dense metaphor cluster which begins with a direct comparison of two domains in form of an analogy. This analogy is then further elaborated, partially by using indirect metaphors within the analogy, over a stretch of almost two minutes of professor talk. This discourse episode, which is shown in example (5), occurs in the *Aggression* lecture during the sub-unit we labeled *Theory*. In this subsection, the professor explains a theory about aggression, the *Catharsis Theory*, by explaining a model this theory is based on. This model is called the *Hydraulic Model* and was developed by Konrad Lorenz (2002).

- (5) “But think about this *tank of water as the reservoir within your soul, that aggressive impulses are dripping into*. Little hassles and frustrations of day-to-day life keep adding new bits of aggressive impulses to who you are. And as this *tank fills up*, the *pressure of the weight* of these impulses becomes *stronger* and *stronger* and they *push on this plug* that keeps it *bottled up*. Now, you don’t behave aggressively, until all this stuff kind of *explodes* and comes *shooting out of you*. And the *weight* – and there’s two different factors here. One of the factors in this model as to whether you become aggressive or not, is the *weight of the water in the tank* – or the amount of aggression that’s *piling up*. Because as that gets *deeper* and *deeper*, and *heavier* and *heavier*, there is more *pressure* for it to *come out*. But at the other end, there are stimuli out there in the world that you might be exposed to – aggression-eliciting stimuli, aggressive models, and what have you, that will be *pulling on the plug* from the other end. So, if you got a situation where there is a lot of aggression in there, and just the right things *pulling on the plug* from the other end, according to the hydraulic

model, you're setting the stage for these aggressive urges to *come pouring out.*"

In the first sentence of example (5), the analogy between the human *soul* and a *tank of water* is set up. Our soul is conceptualized as a container that is compared to a tank of water (which is a special form of a container). Aggressive impulses are conceptualized as drops of water that drip into this water tank. During the rest of the episode illustrated in example (5), the professor stays in this analogy and elaborates it by metaphors. These metaphors are considered deliberate since they are part of the analogy. Most of the metaphorical expressions refer to the concrete domain of the analogy, the tank of water, and describe that in further detail: *tank fills up, pressure of the weight, push on this plug or bottled up.*

Interestingly, at some point, the professor switches and uses metaphors like *explodes* and *shooting out of you*, which refer to the abstract domain of the analogy, the human SOUL. These metaphors are instances of indirect and conventional metaphor. We are familiar with these metaphors from the conceptualization of anger in the everyday English language (cf. Lakoff & Kövecses 1987: 380-385⁴). Since *explodes* and *shooting out of you* are indirect and conventional metaphors, they are rather unlikely candidates of deliberate metaphor. However, we argue that in this context, the professor uses them deliberately. The deliberate use arises from the fact that the metaphors are embedded in the general comparison between a tank of water and the human soul. We could say that all metaphors highlighted in example (5) are instances of the conceptual metaphor AGGRESSION IS A FLUID IN A CONTAINER. All instances belonging to this conceptual metaphor seem to be used deliberately, regardless of their degree of conventionality, because the professor deliberately draws this analogy which describes this particular model in psychology. After the use of indirect metaphors, the professor explicitly reiterates his analogy by saying *the weight of the water in the tank – or the amount of aggression that's piling up.* In this utterance, he again compares the two domains of his initial analogy, probably in order to ensure that the students are still following his analogy.

⁴ For a more differentiated discussion of conceptualizations of anger in the English language and a refinement of Lakoff and Kövecses' (1987) general statements about these conceptualizations, see Beger (2011).

Above, we mentioned that some metaphors in example (5) are conventional. However, the concept of aggression illustrated in example (5) as a whole is quite distinct from the everyday conceptualization of anger or aggression in English, since it lacks the central aspect of heat⁵. By using the analogy illustrated in example (5), the professor invites the students to conceptualize aggression as a fluid dripping into a container (the human soul) and creating a pressure on that container. The pressure is not created by heat, but by the sheer weight of the fluid. This eventually leads to an aggressive outburst which is conceptualized as an outpour of the fluid. This perspective is probably new to the students, as it is different from the everyday model that builds around the central aspect of heat (cf. Lakoff & Kövecses 1987: 380-385), but it exploits a source domain that the students are familiar with from their everyday experiences (FLUID IN A CONTAINER). The deliberate metaphors the professor uses in example (5) seem to be the primary means to communicate a new scientific concept (the hydraulic model) to the students.

Interestingly, the professor picks up this metaphor again later. After the *Theory* sub-section shown in example (5), the professor briefly describes a study to exemplify the theory of the hydraulic model of aggression. This is followed by a *Conclusion* sub-section in which the professor points out what we can do about aggression on the basis of the hydraulic model. In this *Conclusion* sub-section, the professor takes up the analogy introduced in the *Theory* sub-section shown in example (5) by using indirect metaphors that refer to it. This is illustrated in example (6).

- (6) “And so, the thing you want to do to minimize violence is let people *dribble* some of this stuff [aggression] *out* innocently. Let’s prevent it from *building up* to the point where it’s really *heavy* and *drain it off* harmlessly a little bit at a time.”

All of the highlighted metaphors in example (6) are indirect, since there is no explicit comparison between the source domain FLUID IN A CONTAINER and the target domain AGGRESSION. The audience has to make this comparison indirectly. The metaphors in example (6) seem to be used deliberately by the professor, though, because they all refer to the analogy that the professor introduced two sub-sections before this sub-section in the lecture. The analogy

⁵ For a more detailed account on the differences of the everyday concept of anger/aggression and the academic concept of anger/aggression, see Beger (submitted).

he introduced earlier allows the professor to use indirect metaphors deliberately. The function of the deliberate metaphors in example (6) is to draw a conclusion about the Catharsis Theory that the professor introduced previously. After his conclusion, the professor moves on with a new theory of aggression. After this passage (6), we do not find metaphors belonging to ANGER IS A FLUID IN A CONTAINER in such a high density. They are only used in a local cluster for the particular topic (Catharsis Theory) that the professor is trying to communicate at this point in the lecture.

4.4 Metaphors locally established in interaction

Another form of a metaphor cluster with potential candidates of deliberate metaphor can be found in the *Eating* lecture. In this case, the cluster is not as dense as we have seen in example (5), but linguistic metaphors for the abstract domain FAMILY that share the source domain STATE are used repeatedly over a stretch of four and a half minutes that includes a sequence of professor-student-interaction. In the following, we discuss the question whether or not these metaphors are used deliberately by analyzing the examples (7) to (10). Example (7) illustrates the first occurrence of an instance the conceptual metaphor A FAMILY IS A STATE. It occurs in a *Summary* sub-unit in which the professor summarizes the characteristics of the typical family of an anorexic child. This *Summary* sub-section is followed by an example without any deliberately used metaphors. After that, example (8) occurs in a *Conclusion* sub-unit. Following an *Interaction* sub-unit and another *Conclusion* sub-unit, both of which feature more instances of the metaphor THE FAMILY IS A STATE, the professor is giving another example without using any metaphors deliberately. Example (9) occurs in the subsequent *Conclusion* sub-unit. The last example (10) to be discussed occurs in the *Interaction* sub-unit which follows the *Conclusion* sub-unit example (9) is taken from.

- (7) “Now, the result is a funny mix of acceptance of this message [of perfectionism] and *rebellion* against the family.”
- (8) “So there’s this sort of capitulation, if you will, to the messages of the family. On the other hand there’s also a *rebellion*.”
- (9) “So the idea here is that there’s a *rebellion* that the child is engaging in, in order to *fight back* against the messages of perfectionism.”

- (10) “Now, why, given that low negative affect is an important component of what families here want, why do you think the girl chooses not eating as her form of *rebellion*? Pam⁶?”

Pam: Well it avoids the *fighting* that the family hates so much and probably would punish her for indirectly.

Professor: Ok, so do you think it really does avoid the *fighting* in the long run?

Pam: Not in the long run, but definitely for the short term, it’s less confrontational than *fighting* all the time.”

In examples (7) through (10), the highlighted metaphors are instances of the conceptual metaphor we call A FAMILY IS A STATE. The parents are conceptualized as the GOVERNMENT or the LEADERS who determine the rules and send messages. The child, on the other hand is conceptualized as THE PEOPLE OF THE STATE who can either *capitulate* to the government’s rules or *rebel* against them – or both, as example (8) indicates. Except for capitulation in example (8), all metaphors are indirect metaphors. In example (8), *sort of* and *if you will* signal a direct comparison between the source domain CAPITULATION and the target domain ANOREXIC BEHAVIOR. This is at least what we infer from the context. In our opinion, the *there’s* refers to the daughter’s anorexia as a means to comply with the parents’ message that she is supposed to be thin, which was said earlier in the discourse. In addition to the observation that most metaphors in examples (8) through (10) are indirect, we can also establish that they are quite conventional. Both of these characteristics make the above illustrated metaphors unlikely candidates of deliberate metaphor. However, we again have the case that there is a certain repetition of the same source domain (STATE) in several metaphors throughout a certain stretch of discourse. Also notably is the fact that after the professor leaves this local topic of the lecture, the metaphor A FAMILY IS A STATE does not re-occur, except for one instance at the end of the lecture when the professor talks about the treatment of anorexic patients. This seems to support the argument that the professor deliberately uses the metaphors displayed in examples (7) through (10) in order to force the students to consider anorexic behavior from a particular new perspective: Instead of the conventional view of anorexic

⁶ The name of the student has been changed in order to preserve anonymity.

behavior as a beauty obsession, the metaphors used in examples here suggest the view of anorexia as a “weapon” of the suppressed child against his or her parents. It is also interesting that one of the students picks up the professor’s metaphor, as example (10) demonstrates. This indicates that the students follow the professor’s invitation to view the concept of anorexic behavior from a new perspective.

5. Summary and conclusion

To summarize our findings, we can say that the metaphors discussed in the previous section demonstrate the importance of deliberate metaphor in the analyzed lectures. In those cases in which we could clearly determine that a metaphor was used deliberately by the professors, their function seemed to be that they aid the professor in communicating abstract or new concepts to the student audience. In most of the cases discussed above, the concepts were familiar to the students, but the professor seemed to try to urge the students to consider these concepts from a new perspective. This unfamiliar perspective was usually a more scientific perspective. We saw that in example (5), for instance, in which the professor used plenty of metaphors belonging to AGGRESSION IS A FLUID IN A CONTAINER in a very short time in order to present an unfamiliar scientific view on this otherwise familiar concept of aggression. The primary function of the deliberately used metaphors in our three college lectures seems indeed to be what Steen (2011a: 16) suggested it would be: To change the perspective on a particular concept by offering a fresh perspective that, at the same time, draws on a familiar source domain. This seems to be a powerful tool for professors in academic discourse, who try to communicate certain scientific concepts or perspectives to their students.

Throughout our analysis, we have considered the question how to determine that a given metaphor is used deliberately. Direct and novel metaphors seem to be clear instances of deliberate metaphor, but we have also shown that they are not the only ones. In metaphor clusters and in cases where metaphors are repeatedly used throughout a discourse episode (see 4.4), or even throughout the whole discourse (see 4.2), we have demonstrated that conventional and indirect metaphors can be used deliberately to highlight certain new aspects of familiar concept. However, some of the metaphors we considered to be used deliberately are arguable cases. Furthermore, our analysis indicates that there

might not be a general procedure to identify all deliberately used metaphors in discourse in general. Indirect and conventional metaphors can be deliberate in specific cases, but that seems to highly depend on the particular discourse context in which they are used.

The unresolved issue of the deliberateness of indirect and/or conventional metaphors in academic discourse is taken up in our current research of academic discourse. Based on a specifically compiled corpus of 25 course meetings in four different subjects at an American college, we examine the role of metaphor in the transfer and/or negotiation of knowledge in academic discourse. The function of deliberate metaphor in the transfer of knowledge is of particular interest and our data provide excellent opportunities to further explore the characteristics of deliberate metaphors in their particular discourse contexts.

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