

# **Translational creativity: how to measure the unmeasurable**

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## **Abstract**

*The present article describes a new approach to measuring translational creativity and its development in students of translation as compared to professional translators. It reports preliminary results of my PhD thesis (Bayer-Hohenwarter, in progress), which forms part of the longitudinal study TransComp (see Göpferich 2008, and this volume).*

*Creativity is a concept that is difficult to define and even more difficult to measure. An appropriate measurement method is crucial, however, in finding out how translational creativity develops. The method proposed here is based on the consensual creativity criteria novelty and acceptability, and the prototypical creativity dimensions flexibility and fluency. More specifically, the analysis reported on in this paper focuses on cognitive procedures attributable to these dimensions. After a brief review of the literature, a case is made for the inclusion of the creative procedures abstraction, modification and concretisation in analysing translational creativity. These procedures represent cognitive shifts between ST and TT as opposed to mere reproduction. The applicability of these procedures is tested on a sample of 13 translations (nine students, four professionals) of one ST item and one set of intermediate translations by one professional translator. This analysis modestly confirms the hypothesised low creativity in first-year students as opposed to that of professional translators.*

## **Defining creativity**

Any measurement of creativity first requires an adequate definition of the concept. In psychology, creativity has been assumed to be an elusive concept that seems to defy precise definition and measurement because of its multicomponential nature. According to Wittgenstein's idea of family resemblances (Wittgenstein 1958/1977, cf. Lakoff 1987/1990: 16), there

are many concepts which cannot be defined by common properties with clear boundaries. Translational creativity is such a concept. Creative translation products and processes can be characterised by qualities such as rareness, outstanding quality, high cognitive effort, fluency or non-literality, but none of these individual qualities are mandatory. Consequently, it is impossible to set up an exhaustive list of criteria that can reasonably be regarded as necessary and sufficient for a definition of translational creativity (cf. e.g. Amelang *et al.* 2006b: 46). Two criteria, however, that any creative process or product must meet are novelty and adequacy (e.g. Torrance 1988, Amabile 1996, Csikszentmihalyi 1997, Gruber/Wallace 1999, Sternberg and Lubart 1999). For the purposes of the present study, translational novelty is defined as a manifestation of (1) exceptional performance that considerably exceeds translational routine, (2) uniqueness or rareness within the TransComp data corpus (= originality), and (3) a non-obligatory translational shift (cf. Kußmaul 2000a: 31<sup>1</sup>), whereby not all aspects must be present. Acceptability is defined as skopos adequacy.

As a first step, a review was carried out of several approaches to specifying and classifying parameters or indicators of creativity, both in translation studies and in psychology. It appeared that the factorial approach suggested by Guilford (1950), the “father of creativity research”, provided the most promising and comprehensive framework. It comprises nine dimensions, or basic abilities, which are a prerequisite for creativity: novelty, fluency, flexibility, ability to synthesise, ability to analyse, ability to reorganise/redefine, complexity/span of ideational structure, and evaluation. It seems possible to attribute all manifestations of translational creativity, e.g. non-literality, generativity as measured by Krings’ variant factor (1988, 2001), or Kußmaul’s types of creative translation (2000a, 2000c), to one of these dimensions. Ideally, Guilford’s framework will enable us to define translator profiles based on specific strengths and

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<sup>1</sup> Contrary to Kußmaul’s view, non-obligatory shifts are considered to be more creative than obligatory shifts. If a literal translation sufficiently reaches skopos adequacy, the production of a non-obligatory shift indicates a particularly high awareness of quality, willingness to take risks, motivation to pursue one’s search, etc. In the case of obligatory shifts, however, relatively little problem sensitivity is required in order to deviate from the ST structure.

weaknesses in different areas, e.g. high fluency but little evaluation competence or high flexibility but little fluency.

My PhD thesis focuses on novelty, fluency and flexibility, which are commonly perceived as the prototypical creativity dimensions. Flexibility is defined as the ability to transgress fixedness (e.g. literalness in translation) and fluency as the ability to produce a large number of translation variants and/or adequate translation solutions spontaneously or even automatically.

This article focuses on how flexibility can be pinpointed in translations. The idea is to identify the nature of creative cognitive procedures in translation that express flexibility at the process-level. The advantage of research into creative cognitive procedures is that these seem to provide the key to finding ways of fostering creativity in students of translation. In the following sections a review will be given of some types of “creative procedures” that have been suggested in the literature and in addition an approach to analysing them will be presented.

### **Creative procedures reviewed**

A review of process-oriented psychological approaches showed that they could not be used in my study for two main reasons: (1) traditional process-oriented models, based on or similar to the four-stage model of preparation, incubation, illumination and evaluation (see Preiser 1976: 42 f., for an overview), seem to be too vague and thus inadequate for tracing the development of creative competence; (2) more recent process-oriented approaches (see Amelang *et al.* 2006a: 236 f. for an overview) require the use of neuroscientific methods, which are beyond the scope of this study.

In translation studies and linguistics, analyses of creativity often rely on procedures such as *addition*, *omission*, and *modification*. Different terms for these concepts have been used and different typologies have been developed (e.g. Ballard 1997, Ivir 1998: 138, Pellatt 2006: 52). The major drawback of these typologies seems to be that they refer to purely form-oriented ST-TT differences whereas a classification of *creative* procedures needs to rely on *cognitive* categories. It will be necessary to focus on cognitive categories if the goal is to find out how creative translators think, how creativity develops and how to improve creativity in students of translation.

Recent theories of creativity (e.g. Kußmaul 2000a) draw heavily on prototype semantics (e.g. Rosch 1977) and more specifically, on scenes-and-frames semantics (e.g. Fillmore 1976, 1985). Such approaches promise to overcome the drawbacks of purely form-oriented categorisations of translational procedures and have been used by Kußmaul (2000a, 2000b, 2000c, 2005) for developing his “types of creative translation”.

Fillmore’s (1976, 1985) scenes-and-frames theory is based on the idea that the language system is the mould that we can use to express our ideas. This language system, or the “system of linguistic choices” in Fillmore’s terms, is called “frame” (1976: 63). Frames can trigger associations with “scenes”, that is “not only visual scenes but familiar kinds of interpersonal transactions, standard scenarios, familiar layouts, institutional structures, enactive experiences, body image; and, in general, any kind of coherent segment, large or small, of human beliefs, actions, experiences, or imaginings” (1976: 63). Scenes and frames can activate one another, relate linguistic knowledge to extralinguistic knowledge, and their activation is assumed to be an essential process for the building of meaning.

### **Kußmaul’s types of creative translation**

Kußmaul (2000a) classifies translation shifts on a cognitive basis into seven types: (1) Change of frames, (2) Framing, (3) Picking of scene elements from one frame, (4) Picking of scene elements from one scene, (5) Change of scenes, (6) Enlarging of a scene and (7) Re-framing. These types of creative translation without question represent a very interesting approach because it was the first time an attempt was made to use scenes-and-frames semantics to identify and classify the cognitive procedures at work during translation. Kußmaul’s work was an important step, moving beyond the concept of mere form-oriented shifts that have traditionally been the focus of attention. In Guilford’s framework, six of Kußmaul’s seven types could be attributed to the flexibility dimension, and Kußmaul’s second type (framing) would be an example of his novelty dimension.

However, a weakness of Kußmaul’s approach is that the different types are not easily distinguished or easily remembered, the reasons for which partly seem to reside in the somewhat fuzzy use of the word *frame*, in overlaps between the different types and in that the types appear to

belong to different levels of abstraction. As explained before, *frame* refers to a system of linguistic choices whereas *scenes* are more abstract extralinguistic entities. Within our current research framework, however, it is in many cases very difficult to objectively trace the nature of scenes evoked in the heads of translators by inferring from the linguistic elements contained in the think-aloud protocols.

Kußmaul's typology provides us with extremely helpful and inspiring insights for identifying creative translation procedures, but some ground remains to be covered.

### **Three types of creative translation procedures**

An attempt to measure translational creativity must also consider the process level, i.e. creative procedures, if one wants to find out how creativity develops, why certain translators produce more creative translations than others and perhaps also how to foster creativity in students of translation.

Apart from the scenes-and-frames semantics and prototype semantics mentioned earlier, there is a third concept rooted in cognitive theory, which has so far not received any attention in translation theory, though it would appear to be very useful. This is the theory of basic-level primacy (see below).

According to Lakoff's (1987/1990: 31ff) and Rosch's (1977) interpretation of Brown's (1958) findings, humans operate on various levels of categorisation, for example when they reason about something or describe the world around them. With reference to the notion of different levels of categorisation, it can thus be argued that TT renderings that belong to the *same* level of categorisation as the corresponding ST element can generally be considered "natural" and less creative than TT renderings that belong to a *different* level of categorisation. This explains why "literal" translations that are on the same level of categorisation as the corresponding ST element are commonly (and reasonably) regarded as less creative than non-literal translations. The same principle applies to translation briefs: a brief that requires a translation according to the ST function and with practically the same target group, except that it is from the target culture, is generally considered routine and non-creative. Briefs that include a variation of the translation's function, e.g. a specialised text

that needs to be translated for the general public or vice versa, are considered more creative.

Moreover, according to the theory of *basic-level primacy* (Brown 1958, cf. Lakoff 1987/1990: 13 f), the basic level of categorisation, e.g. *dogs* as opposed to *mammals* or *poodles*, is, among others, used most frequently in natural language and is connected with most ease of cognitive processing and linguistic expression. Whereas the basic level can be considered “natural”, higher or lower levels of categorisation are said to be products of the imaginative and thus the creative mind. From this, it can be deduced that abstractions from lower or higher ST levels up or down to the TT basic level respectively (e.g. TT *dogs* instead of ST *poodles* or TT *cars* instead of ST *motor vehicles*) can also be considered less creative than TT renderings that stay on the same low or high level of categorisation as the ST. In fact, the use of umbrella terms on the basic level of abstraction is a frequent strategy in sight translation or interpreting, whereas the use of higher-order abstractions (e.g. *motor vehicles* instead of *cars*) can be assumed to be more effortful. The use of lower-order categorisations requires more activation of knowledge and for this reason seems to take more effort. It is as yet uncertain to what extent these findings can be applied to translation, and in order to move beyond the stage of speculation a more detailed analysis with a larger data corpus is required.

### **A descriptive framework**

A critical analysis of the approaches and findings mentioned above allowed me to draw the conclusion that, instead of using *form-oriented* shifts or a typology based on scenes and frames, one could perhaps more aptly analyse translations with a view to the following three basic creative procedures:

- Abstraction ↑
- Modification ↔
- Concretisation ↓

As the arrows indicate, this basic typology refers to “directions of thought”, i.e. upward, sideways and downward with reference to the ST element as opposed to mere *reproduction*. These three procedures appear frequently in Kußmaul’s explanations of his types of creative translation and can also be

said to correspond to the levels of categorisation suggested by Brown (1958). *Abstraction* refers to situations where translators use more vague, general or abstract TT solutions. *Modification* refers to strategies such as re-metaphorisation or changes of perspective. If the TT evokes a more explicit, more detailed and more precise idea than the ST, this procedure is called *concretisation*. It is assumed that actions such as paraphrase, addition and deletion *cannot* be directly attributed to any one of these three procedures. A paraphrase, for instance, can lead to a more abstract or a more precise idea in the TT than that contained in the ST. The basic creative procedures suggested may therefore have very different manifestations at the form level, but this form is not decisive when creative procedures are assigned. It is assumed that all translation products can reasonably be assigned to either abstraction, modification, concretisation or reproduction.

The abstraction, modification or concretisation procedures can all be considered creative because they deviate from the initial level of categorisation, i.e. the ST level. This can be justified for several reasons:

- Abstraction figures prominently among strategies associated with creativity in psychology (e.g. Ward *et al.* 1999: 191).
- Concretisation, modification and abstraction can all be considered to require more cognitive effort than reproduction. Whereas reproduction is mere routine translation at an identical level of categorisation, concretisation, modification and abstraction can be regarded as non-routine. Among the many researchers who see creativity as a type of problem-solving behaviour, cognitive effort as opposed to routine is commonly held to be one of the most essential creativity criteria (e.g. Weisberg 2006).
- Modification can be associated with flexibility in the sense of Guilford (1950) and other creativity researchers inasmuch as seeing things from a different perspective, or finding new uses for available resources, are commonly regarded as aspects of creativity.
- Apart from being a shift and thus a sign of flexibility, concretisation can be associated with “depth of analysis”, i.e. going beyond the mere surface of the apparent and obvious and giving details of what is assumed to be

the core meaning. Such depth of analysis is considered creative by e.g. Rietzschel *et al.* (2007).

All three procedures, abstraction, modification and concretisation, can be considered shifts and thus phenomena that can be categorised in Guilford's dimension of flexibility. All three, if they are to be successful and result in an adequate product, require deep and true understanding which, as opposed to processing the surface of language, is considered a creative process in its own right (e.g. Holman & Boase-Beier 1998/1999b: 15; Bastin 2003: 350, Dancette *et al.* 2007) and different from what machines, for example, can accomplish. Non-creative processes essentially consist of reproducing the ST element; a lack of creativity can thus mostly be attributed to fixedness on the ST structure. Fixedness can, however, also be extended to a presumed authoritative ST validity ("what is written in the ST is true"), or fixedness on a certain type of problem-solving strategy (e.g. re-metaphorisation but not concretisation; body metaphors but not other metaphors).

### **Assumptions**

It is assumed that first-year students will tend to use more same-type creative procedures in their translations than third-year students or professional translators, i.e. more experienced translators will presumably cover a broader range of creative procedures. The more creative procedures that can be applied while translating a creativity-demanding ST element, the more likely it is that the result will be a creative solution.

Another assumption is that advanced students and professional translators will apply more unique procedures and produce more unique solutions.

Furthermore, it is assumed that more competent translators will display higher fluency in cases where they can fall back on routine processes, i.e., they will produce more instant solutions.

The following section describes the results of a pilot analysis of creative procedures that occurred in the translation of one ST unit in my corpus.



### Sample analysis of creative translation procedures for one ST unit

The first ST segment is from an English popular science book on how to win friends. It comes from a chapter where it is reasoned that the behaviour of dogs can be taken as a model for success in finding friends:

ST:

If you stop and pat him [the dog], he will almost jump out of his skin to show you how much he likes you.

My sample corpus comprises the translations of nine students and four professionals, which are listed in Table 1 below. I have awarded excellent solutions “pass+”. Though such a judgment admittedly increases the subjectivity of the rating, it is considered necessary because outstanding quality is a frequently mentioned creativity criterion. It is even considered legitimate, as creativity is based by definition on subjective judgments. By maximally objectifying all other indicators, including process indicators, it is believed that overall subjectivity is kept to a minimum. In the “Procedures” column, the creative procedures abstraction, modification and concretisation as defined above are indicated; if none of these procedures applies, the label *reproduction* for a non-creative reproductive procedure is given.

As can be seen from the table, the translations analysed can be classified into four main groups:

*Group A* (TT2, TT6) The existing metaphor is re-produced and results in an inadequate solution because the English *to jump out of one's skin* in this case does not mean “to be badly frightened” or “to be very much surprised” but that the dog is overwhelmed by emotions and/or shows very strong affection.

*Group B* (TT1, TT7, TT11; TT10) The meaning “dog shows very strong affection” is rendered non-metaphorically and represents an abstraction. TT10 is similar in that it also represents a de-metaphorisation and abstracts the meaning but also different insofar as it describes the dog's seemingly irrational emotional behaviour.

Table 1. Translations of the ST unit “dog jumps out of his skin”<sup>2</sup>

TT	Subject	Wave	Target text	Rating	Procedures
TT1	JTH	t1	wird er alles tun [um Dir zu zeigen wie sehr er dich mag.]	pass	Abstraction; de-metaphorisation
TT2	JZE	t1	wird er beinahe aus seiner Haut springen	fail	Reproduction
TT3	ERE	t1	wird er an dir hoch springen	pass	Concretisation; de-metaphorisation
TT4	LPE	t1	wird er sich fast überschlagen	pass	Modification; re-metaphorisation
TT5	MLE	t1	wird er beinahe einen Luftsprung machen	pass	Modification; re-metaphorisation
TT6	STO	t1	wird er fast aus seiner Haut herausspringen	fail	Reproduction
TT7	THI	t1	tut er alles um dir zu zeigen	pass	Abstraction; de-metaphorisation
TT8	BKR	t3	wird er voll Übermut und Freude um dich herumspringen	pass +	Concretisation; de-metaphorisation explicitation
TT9	SFR	t3	wird er sich fast überschlagen	pass	Modification; re-metaphorisation
TT10	GLS	t8	wird er sich wie verrückt gebärden	pass	Abstraction; de-metaphorisation
TT11	HEM	t8	dann wird er alles tun	pass	Abstraction; de-metaphorisation
TT12	HOB	t8	zerreißt er sich fast	pass	Modification; re-metaphorisation
TT13	SCH	t8	wird er sich fast überschlagen	pass	Modification; re-metaphorisation
TT14	MT		bringt er sich beinahe um	pass	Modification; re-metaphorisation
TT15	GBH		zeigt er Ihnen mit einem Freudentanz [wie sehr er Sie mag]	pass +	Modification; re-metaphorisation
TT16	GBH		springt er an Ihnen hoch und demonstriert Ihnen seine Zuneigung einfach umwerfend	pass	Concretisation; de-metaphorisation enrichment

<sup>2</sup> The first column of the table gives a running number for the TT (e.g. TT1), the second gives the abbreviation for the anonymised subject (or, exceptionally, MT for model translation or GBH for my own translation), and in the third column the test wave is specified (t1 means translation at the beginning of the first semester, t3 at the beginning of the third semester, t8 translation of professional translator). The fifth column ‘Rating’ specifies the global ratings in the sense of adequate or inadequate with a view to the given skopos.

*Group C* (TT4, TT5, TT9, TT12, TT14) The ST metaphor is rendered by a different TT metaphor. Most of the Group C TT metaphors, including model translation TT14, provide violent images for the meaning “dog shows very strong affection”. According to these images, the dog’s affection puts his life at risk (*er zerreit sich* – literally: “tears himself into pieces”; *er bringt sich um* – literally: “he kills himself”; *er berschlgt sich* – literally: “he overturns”). TT5 is the only metaphor that provides a less violent image for “showing one’s affection” (*einen Luftsprung machen*, literally: “to jump into the air”; translation: “to cut a caper”, “jump for joy”, “be exceedingly happy”).

*Group D* (TT3, TT8): The meaning is concretised and (one aspect of) the behaviour of the dog described non-metaphorically. In Kumaul’s terminology, this would be picking one scene element from a scene. TT3 uses the scene element of the dog jumping at the person; TT8 uses the scene element of the dog foolishly running around the person. It is also possible to use another scene element like the dog licking the person. One could argue that some people would not be happy at all if a dog jumped on them or licked them and that translations of this kind thus do not fulfil their purpose, which is to illustrate how dogs make friends and not how they deter people. However, this solution is considered a borderline pass because everybody is assumed to know that dogs just mean to show their affection and that the reader can draw the intended analogy between the dog’s behaviour and friend-winning human behaviour despite their personal feelings about certain aspects of dog behaviour.

TT15 and TT16 are my own: TT15 shows how, departing from the concretisation of the dog’s actual behaviour, a different metaphorical image can be found for the meaning aspect “dog is overwhelmed by his emotions”: *einen Freudentanz machen* corresponds to “dance a jig of joy”. TT16 picks one element from the scene of a dog’s behaviour and compensates for the de-metaphorisation by including a pun in the second part of the sentence. The pun is based on the notion of knocking someone over (*umwerfen*) as the dog would if it jumped at someone in great joy; the adjective derived from *umwerfen* can also take the meaning of a positive adjective (roughly: “dazzling”, “drop-dead gorgeous”). This pun can be

seen as a form of linguistic enrichment. Under “linguistic enrichment” I subsume all instances of a “neutral” ST element rendered with a TT stylistic device that increases the rhetorical effect of a message such as a metaphor, a pun, alliteration or rhyme.

Interestingly, five of the 13 TTs from the corpus have the German counterpart of *jump* (= *springen*) included in some way in the target language. This lexical link occurs not only in reproductions, but also in concretisations and modifications (*Luftsprung*, *hoch springen*, *herumspringen*). We could subsume such links, be they lexical or syntactic, under the label “fixedness”. Such translational fixedness occurs when the ST lexical elements trigger TT solutions with at least one structurally similar element, or, in other words, the ST surface structure strongly activates other metaphors, scene elements, idioms or other TL expressions that build on the same linguistic element (here: *jump*).

An overview of the results for the “dog-jumps-out-of-his-skin” translations is given in Table 2 with the goal of assessing how creative the various solutions are. All same or same-type translations are included in the same table row; the translations are classified according to their creative procedures with all *creative* procedures marked in italics. In the row “Creativity indicators”, all indicators that were observed for a particular translation are listed. *Acceptability* is a necessary prerequisite; in the case of a fail, no more creativity indicators need to be specified because creativity must be excluded from the outset. *Comprehension* refers to a creative comprehension process; this is true for all adequate solutions because the English *to jump out of one’s skin* usually refers to the meaning “be badly frightened” or “be very much surprised” and was used in a different meaning only in the given context. *P-flexibility* stands for process flexibility and refers to an abstraction, modification or concretisation procedure and corresponding secondary procedures. The number given in brackets refers to the number of secondary procedures observed; for instance, solutions that include re-metaphorisation and enrichment are deemed more creative than solutions with re-metaphorisation only.

Table 2. Creativity assessment of the translations of “dog jumps out of his skin”

<b>Dog jumps out of his skin</b>	<b>Primary procedure(s)</b>	<b>Secondary procedure(s)</b>	<b>Target texts</b>	<b>Creativity indicators</b>	<b>Creativity rating</b>
Group A: wird er beinahe/fast aus seiner Haut heraus/springen fährt er fast aus der Haut	Re-produce		TT2_t1 (x) TT6_t1 (x)	x	
Group B: wird er alles tun	<i>Abstract</i>	<i>De-metaphorise</i>	TT1_t1 TT7_t1 TT12_t8	<i>Acceptability</i> <i>Comprehension</i> <i>P-flexibility (1)</i>	2
wird er sich wie verrückt gebärden	<i>Abstract</i>	<i>De-metaphorise</i>	TT10_t8	<i>Acceptability</i> <i>Comprehension</i> <i>P-flexibility (1)</i> <i>Uniqueness</i>	3
Group C: wird er sich fast überschlagen	<i>Modify</i>		TT4_t1 TT9_t3 TT11_t8 TT14	<i>Acceptability</i> <i>Comprehension</i> <i>P-flexibility (1)</i>	2
Group C: wird er beinahe einen Luftsprung machen zerreißt er sich fast	<i>Modify</i>		TT5_t1  TT13_t8	<i>Acceptability</i> <i>Comprehension</i> <i>P-flexibility (1)</i> <i>Uniqueness</i>	3
Group D: wird er an dir hoch springen	<i>Concretise</i>	<i>De-metaphorise</i>	TT3_t1	<i>Acceptability</i> <i>Comprehension</i> <i>P-flexibility (1)</i> <i>Uniqueness</i>	3
Group D: wird er voll Übermut und Freude um dich herumspringen	<i>Concretise</i>	<i>De-metaphorise</i> <i>Explicitate</i>	TT8_t3	<i>Acceptability</i> <i>Comprehension</i> <i>P-flexibility (2)</i> <i>Uniqueness</i> <i>Outstanding quality</i>	5
springt er an Ihnen hoch und demonstriert Ihnen seine Zuneigung einfach umwerfend	<i>Concretise</i>	<i>De-metaphorise</i> <i>Enrich</i>	TT16	<i>Acceptability</i> <i>Comprehension</i> <i>P-flexibility (2)</i> <i>Uniqueness</i>	4
zeigt er Ihnen mit einem Freudentanz	<i>Concretise</i> <i>Modify</i>	<i>Explicitate</i>	TT15	<i>Acceptability</i> <i>Comprehension</i> <i>P-flexibility (2)</i> <i>Uniqueness</i> <i>Outstanding quality</i>	5

*Uniqueness* refers to a unique solution within the given corpus; this, however, is only a preliminary indicator that will presumably require modification and re-naming as *rareness* when all (intermediate) translation solutions of all experimental waves have been analysed. *Outstanding quality* refers to particularly adequate, elegant or linguistically economic solutions and is meant to compensate for the fact that some of the solutions that are considered a pass are in fact a very bare pass. Finally, a creativity rating is given by adding all creativity indicators together except acceptability (which is the necessary prerequisite).

Generally, the creativity ratings that result from this assessment procedure correspond with my own intuitive judgment. However, the creativity indicators from Table 2 are not exhaustive. For instance, analyses of additional segments from the corpus (Bayer-Hohenwarter, in progress) have shown that the indicator “comprehension” is not applicable to all segments. Moreover, in order to refine the analysis, the intermediate solutions of the individual translators must be included. By way of example, an analysis of HOB’s problem-solving process is given below. ITT stands for “intermediate target text”:

Table 3. Overview of intermediate translations for “dog jumps out of his skin” (HOB\_t8)

<b>HOB t8</b>	<b>Target text</b>	<b>Rating</b>	<b>Procedures</b>
ITT1	fahrt er fast aus der Haut	fail	Reproduction
ITT2	fährt er fast aus der Haut	fail	Reproduction
ITT3	macht er fast ’nen Kopfstand	fail	Modification
ITT4	reißt er sich ein Bein aus	fail	Modification
ITT5	zerreißt er sich	fail	Modification
TT	zerreißt er sich fast	pass	Modification; re-metaphorisation

This example is an interesting account of how a creative solution comes into being. The translator starts off by producing a literal translation that demands relatively little cognitive effort. As this primary equivalent

association (cf. Krings 1986: 317) proves unsatisfactory even if downtoned (using the word *fast* – “almost”), the translator continues searching for similar TL metaphors in his mind. Just as in the ST, his second intermediate TT solution (ITT3) is a body metaphor (*einen Kopfstand machen* literally means “to do a headstand”, but figuratively it means something like “to work extremely hard”) and also produces an additional humorous effect if one visualises a dog doing a headstand. The translator is obviously aware of this and recognises the need for continuing his search. This time, his bilingual associative competence allows him to fall back on an English synonym of the ST element which, of course, is not an adequate TT solution but serves as another point of reference. This strategy can be considered a change of perspective and an unconventional method of activating potential TT solutions that can be hypothesised to be unique or at least rare within the TransComp data corpus. For this reason, this strategy is an instance of (hypothesised) originality and (proven) flexibility; it helps the translator in finding a successful definitive TT solution. ITT4 *reißt er sich ein Bein aus* constitutes yet another re-metaphorisation with the focus on the dog’s body. However, it is again an inadequate solution because the idiom is usually used in the negated form *er reißt sich kein Bein aus*, meaning “he won’t strain himself”. With ITT5 the translator takes up the element *reißen* and produces yet another body metaphor which, however, at least partly activates the same meaning as ITT3. By downtoning this solution with German *fast* (“almost”), the comic effect produced by visualising the literal meaning of a dog torn into bits is weakened and the solution improves. This step-by-step procedure adopted by the translator shows that he must invest high cognitive effort and that he can approach an acceptable solution only gradually – a phenomenon that could be analysed more profoundly within Guilford’s dimension of “complexity/span of ideational structure”. A more creative solution, however, would have required even more determination and “creative strength”.

ITT3, ITT4 and ITT5 show how solutions can be found by building on previous suggested solutions, by changing the voice and by specifying the emotional state. It is felt that, in this example, visualisation (cf. e.g. Kußmaul 2005) is a particularly useful strategy that helps in judging the adequacy of intermediate solutions. As regards an overall creativity rating, it is first of all argued that, at the process level, the unacceptability of an

ITT must not be counted as an immediate elimination criterion for creativity. Translators often produce inadequate ITTs while fully aware of their defect; these ITTs are just small steps in associative chains or other creative production processes and it would be unfair to judge the quality of the translation process according to the acceptability of the intermediate result. Reproduction, however, is believed to be a valid elimination criterion for creativity, also at the process level of ITTs. Instead, it is believed necessary to judge the acceptability and quality of the translation process according to the following criteria:

- the number of intermediate translations that are considered to be a valid indicator of fluency;
- the creative procedures abstraction, modification and concretisation inherent to ITTs as indicators of flexibility;
- automaticity and spontaneity as indicators of fluency;
- own idea vs. dictionary result as an indicator of novelty (cognitive effort);
- other interesting procedures such as changes of perspective or visualisation.

The indicators “automaticity” and “spontaneity” result from the analysis of the time interval between the reading of a particular ST segment and the production of the corresponding TT element. If a TT element is generated at once, i.e. within three seconds of the first encounter with the ST element (excluding the pre-phase, where the ST is usually read without deep analysis) and without any obvious signs of considerable cognitive effort involved, I speak of an automatic translation; if a TT element is generated within three seconds, but signs of considerable cognitive effort exist (e.g. previous or subsequent comments or the production of translation alternatives), I speak of a spontaneous translation. The creativity assessment can thus be refined as follows:



Table 4. Creativity assessment for intermediate translations of “dog jumps out of his skin” (HOB\_t8)

HOB t8	Target text	Conditions of production	Creativity
ITT1	fahrt er fast aus der Haut	main phase: written down after a long pause	x (Reproduction)
ITT2	fährt er fast aus der Haut	main phase: after 3 minutes of producing other TT and re-reading ITT1 but without delay	x (Reproduction)
ITT3	macht er fast 'nen Kopfstand	main phase: generated spontaneously after ITT2; dismissed without further comment	Modification; re-metaphorisation Spontaneity
ITT4	reißt er sich ein Bein aus	main phase: HOB produces English primary association <i>fall over backward</i> and uses it as a search term in online dictionary. ITT4 is one search result.	x (Modification) Change of perspective
ITT5	zerreißt er sich	main phase: solution taken from online dictionary	x (Modification)
TT	zerreißt er sich fast	main phase: generated and self-dictated immediately after comment	Modification; re-metaphorisation Spontaneity
			Generativity (4) Procedures (1) Spontaneity (2) Others (1)

The total rating given in the last cell gives the overall creativity rating for HOB's problem-solving process. *Generativity (4)* refers to the 5 intermediate solutions whereby the difference between ITT1 and ITT2 is solely grammatical and thus considered negligible. *Procedures (1)* refers to one modification evident in ITT3 after the exclusion of the dictionary results (ITT4, ITT5) and after the exclusion of the procedure assigned to the final TT that had been counted before. *Spontaneity (2)* refers to the two instances of rapid TT production, where in both cases the ST element had been previously dealt with. *Others (1)* refers to HOB's generation of a ST synonym (“fall over backwards”) that serves as a new starting point for associations and dictionary research, and can be considered a change of perspective. The sum of eight creativity points on this process level together with HOB's three creativity points on the product level are assumed to be a sound quantified basis for further comparisons with

translations by the same translator and translations of the same ST segment by other translators with the same and with different competence levels. It still remains to be decided if abstraction will receive a score identical to that of concretisation and modification. Only an analysis of a larger sample and comparison with intuitive creativity judgments will allow this decision to be made.

A first comparison of these intermediate results by HOB with those available from the other subjects seems to indicate that first-year students more often produce fewer or no intermediate solutions, which can be interpreted as a lack of problem sensitivity (Guilford's first creative dimension). Interestingly, all three of the subjects for which the TAP transcripts are available to date and who produced at least two ITTs stuck to the procedure they chose at first: SFR produced three modifications, HOB produced four modifications, HEM produced two abstractions. This phenomenon can be interpreted as a type of successful procedural association or, if the results were inadequate, one could speak of unwanted procedural fixedness. A similar pattern of associations that can be successful or unsuccessful was referred to earlier in this paper (e.g. *reißt er sich ein Bein aus – zerreißt er sich*; or *jump out of one's skin – hoch springen*).

The analysis of 15 translations (13 from the TransComp corpus and two produced by myself) modestly confirms the following predictions. First-year students seem to have a stronger tendency towards reproduction, produce fewer acceptable solutions, fewer unique solutions and fewer ITTs. This is an indication of low creativity mostly in the sense of little problem sensitivity, little originality, little flexibility and, at least partly, lower fluency. However, these conclusions are based on an extremely small sample and need to be tested on a larger corpus, before more reliable conclusions can be drawn.

## Conclusion

By way of conclusion I hope to have shown that measuring creativity is worthwhile within Guilford's framework. The cognitive procedures abstraction, modification and concretisation vs. reproduction can be combined with other creativity indicators and assigned to

novelty/originality, fluency and flexibility. Abstraction, modification and concretisation appear to be sound categories that bridge the gap between traditional shifts at the form level and cognitive categories. Quantifying the types of procedures involved and several other creativity indicators can provide interesting results and allow us trace the development of translational creativity. Not only can we find out which procedures are used by beginners as opposed to experienced translators, but we can also find out about the range of procedures that one translator is able to activate. We can also trace how translators proceed from the primary equivalent association via several intermediate solutions to the definitive target text by means of procedures which have gradually been refined or which might even be diametrically opposed. A qualitative analysis can show what types of procedures at a micro level (e.g. fixedness on body metaphors) can be successful or unsuccessful, how different creativity profiles of different translators can have different or similar effects on the overall creativity of their performance and how these profiles evolve over time.

## References

- Amabile, T. M. 1996. *Creativity in Context. Update to the Social Psychology of Creativity*. Boulder/Oxford: Westview Press.
- Amelang, M., Bartussek, D., Stemmler, G. & Hagemann, D. 1981/2006a. Zur Theorie der Kreativität. Prozessmodelle. In M. Amelang, D. Bartussek, G. Stemmler & D. Hagemann (eds). *Differentielle Psychologie und Persönlichkeitsforschung* 6. Completely revised 6th ed. Stuttgart: Kohlhammer. 235-237.
- Amelang, M., Bartussek, D., Stemmler, G. & Hagemann, D. 1981/2006b. Zentrale Begriffe. Konstrukte und Persönlichkeit. In M. Amelang, D. Bartussek, G. Stemmler & D. Hagemann (eds). *Differentielle Psychologie und Persönlichkeitsforschung* 6. Completely revised 6th edn. Stuttgart: Kohlhammer. 45-48.
- Ballard, M. 1997. Créativité et traduction. *Target* 9 (1): 85-110.
- Bastin, G. 2003. Aventures et mésaventures de la créativité chez les débutants. *Meta* 48 (3): 347-360.
- Bayer-Hohenwarter, G. (in progress). Translatorische Denkflüssigkeit und Flexibilität. Eine empirische Studie zur Entwicklung translatorischer Kreativität als Komponente translatorischer Kompetenz. Graz: University of Graz.
- Brown, R. 1958. How shall a thing be called? *Psychological Review* 65: 14-21.
- Csikszentmihalyi, M. 1997. *Creativity. Flow and the Psychology of Discovery and Invention*. New York: Harper.

- Dancette, J., Audet, L., & Jay-Rayon, L. 2007. Axes et critères de la créativité en traduction. *Meta* 52 (1): 108-122.
- Fillmore, C. J. 1976. Frames semantics and the nature of language. In S. R. Harnad, H. D. Steklis & J. Lancaster (eds). *Origins and Evolution of Language and Speech (Annals of the New York Academy of Sciences 280)*. New York: The New York Academy of Sciences. 20-32.
- Fillmore, C. J. 1985. Frames and the semantics of understanding. *Quaderni di Semantica* 6(2): 222-254.
- Göpferich, S. 2008. Research Project TransComp: The Development of Translation Competence. <<http://gams.uni-graz.at/container:tc>> [December 7, 2008]
- Gruber, H. E. & Wallace, D. B. 1999. The case study method and evolving systems approach for understanding unique creative people at work. In R. J. Sternberg (ed.). *Handbook of Creativity*. Cambridge: Cambridge University Press. 93-115.
- Guilford, J. P. 1950. Creativity. *American Psychologist* 5: 444-454.
- Holman, M. & Boase-Beier, J. 1999. Introduction: writing, rewriting and translation through constraint to creativity. In J. Boase-Beier & M. Holman (eds). *The Practices of Literary Translation. Constraints and Creativity*. First published 1998. Manchester: St. Jerome. 1-17.
- Ivir, V. 1998. Linguistic and communicative constraints on borrowing and literal translation. In A. Beylard-Ozeroff, J. Králová & B. Moser-Mercer (eds). *Translator's Strategies and Creativity. Selected papers from the 9th international conference on translation and interpreting, Prague, September 1995*. Amsterdam/Philadelphia: John Benjamins. 137-144.
- Krings, H. P. 1986. *Was in den Köpfen von Übersetzern vorgeht. Eine empirische Untersuchung zur Struktur des Übersetzungsprozesses an fortgeschrittenen Französischlernern*. Tübingen: Narr.
- Krings, H. P. 1988. Blick in die 'Black Box' – Eine Fallstudie zum Übersetzungsprozeß bei Berufsübersetzern. In R. Arntz (ed.). *Textlinguistik und Fachsprache. Akten des Internationalen übersetzungswissenschaftlichen AILA-Symposiums Hildesheim, 13.-16. April 1987*. Hildesheim: Olms. 393-411.
- Krings, H. P. 2001. *Repairing Texts: Empirical Investigations of Machine Translation Post-editing Processes*. In G. S. Koby (ed.); translated by G. S. Koby, G. Shreve, K. Mischerikow & S. Litzer. Translation of the author's Habilitationsschrift (1994). Kent: Kent State University Press.
- Kußmaul, P. 2000a. *Kreatives Übersetzen*. (Studien zur Translation 10.) Tübingen: Stauffenburg.
- Kußmaul, P. 2000b. A cognitive framework for looking at creative mental processes. In M. Olohan (ed.). *Intercultural Faultlines: Textual and Cognitive Aspects. Research Models in Translation Studies* 1. Manchester: St. Jerome. 57-71.
- Kußmaul, P. 2000c. Types of creative translating. In A. Chesterman, N. G. San Salvador & Y. Gambier (eds). *Translation in Context. Selected Papers from*

- the EST Congress, Granada 1998*. (Benjamins translation library 39) Amsterdam: Benjamins. 117-126.
- Kußmaul, P. 2005. Translation through visualization. *Meta* 50 (2): 378-391.
- Lakoff, G. 1987/1990. *Women, Fire, and Dangerous Things. What Categories Reveal about the Mind*. Chicago/London: University of Chicago Press.
- Pellatt, V. 2006. The ASPRO model of creativity: assessing the creative handling of the translation of 'fat' and 'old'. In I. Kemble & C. O'Sullivan (eds). *Proceedings of the Conference held on 12th November 2005 in Portsmouth*. Portsmouth: University of Portsmouth. 52-62.
- Preiser, S. 1976. *Kreativitätsforschung*. Darmstadt: Wissenschaftliche Buchgesellschaft.
- Rietzschel, E. F., Nijstad, B. A. & Stroebe, W. 2007. Relative accessibility of domain knowledge and creativity: The effects of knowledge activation on the quantity and originality of generated ideas. *Journal of Experimental Social Psychology* 43(6): 933-946.
- Rosch, E. 1977. Human categorization. In N. Warren (ed.). *Advances in Cross-cultural Psychology* 1. London: Academic Press. 1-49.
- Sternberg, R. J. & Lubart, T. I. 1999. The concept of creativity: prospects and paradigms. In R. J. Sternberg (ed.). *Handbook of Creativity*. Cambridge: Cambridge University Press. 3-15.
- Torrance, E. P. 1988. The nature of creativity as manifest in its testing. In R. J. Sternberg (ed.). *The Nature of Creativity. Contemporary Psychological Perspectives*. Cambridge: Cambridge University Press. 43-75.
- Ward, T. B., Smith, S. M. & Finke, R. A. 1999. Creative cognition. In R. J. Sternberg (ed.). *Handbook of Creativity*. Cambridge: Cambridge University Press. 189-212.
- Weisberg, R. W. 2006. Modes of expertise in creative thinking: evidence from case studies. In K. A. Ericsson, N. Charness, P. J. Feltovich & R. R. Hoffman (eds). *The Cambridge Handbook of Expertise and Expert Performance*. Cambridge: Cambridge University Press. 761-787.
- Wittgenstein, L. 1958/1977. *Philosophische Untersuchungen*. Frankfurt: Suhrkamp.

