ANTHONY BROWN *

Teaching advanced writing through the application of transitivity and nominal grouping as defined in systemic functional linguistics

Abstract. This article describes the concept of and experience gained from an advanced level academic writing course offered by the English department of the Language Centre of the Technische Universität Braunschweig. A major part of this course is the analysis of research articles using elements drawn from systemic functional linguistics in an attempt to highlight language conventions and thus inform students for their own writing purposes. Presenting the results of an analysis based on the concepts of transitivity and nominal grouping along with some examples of excerpts of students’ writing, it provides evidence to support the idea that such methods can facilitate the development of relevant language awareness amongst learners and that students appear to appreciate the critical reading abilities that these tools bring.

1. Introduction

The course “Writing for Study and Research” offered by the English department of the Language Centre of the Technische Universität Braunschweig is a one semester long, mixed-level (C1/C2), 3 ECTS, 90 minute-a-week course aiming at improving the academic writing skills of its participants. The course is aimed principally at students in higher semesters preparing to write their final thesis or dissertation.

A founding member of the TU9 group, a cooperation between the leading German technical universities, the Technische Universität Braunschweig is currently composed of 6 departments (Mathematics and Computer Science, Business Administration, Economics, and Social Sciences; Life Sciences [Chemistry and Pharmacy, Biosciences and Psychology]; Architecture, Civil Engineering and Environmental Sciences; Mechanical Engineering; Electrical Engineering, Information Technology and Physics; Humanities and Educational Sciences). In 2013, these 6 departments encompassed 120 different institutes offering 71 degree programmes with a total of 17,192 matriculated students.

As the “Writing for Study and Research” course is open to students from all of these study disciplines, this clearly leads to a wide range of scientific, technical and academic interests.

* Address for correspondence: Anthony BROWN M Ed (applied linguistics), Technische Universität Braunschweig, Sprachenzentrum, Pockelsstraße 4, 38106 BRAUNSCHWEIG.
E-Mail: t.brown@tu-bs.de
Research areas: Subject-specific technical English, academic writing, development of C-tests for placement purposes.
fields of interest amongst the group of students enrolling. Furthermore, as the course targets students approaching the end of their studies or participating in doctoral programmes, the level of specialisation and expertise of the participants is accordingly high. In the summer semester of 2014, 16 students enrolled for the course. Of these, 4 were studying biotechnology, 2 electrical engineering, with one each from environmental engineering, chemistry, media studies, aerospace engineering, social science, combined business administration and mechanical engineering, transportation systems, psychology, biology, and energy systems engineering.

One of the biggest challenges in the designing of an advanced level academic writing course with such a multidisciplinary target group is in raising awareness of the various discourse community generated language specifics whilst, at the same time, finding common ground for group learning activities. To this end, it was decided to have two main tracks within the course. Firstly, the students should purchase the book *Academic Writing for Graduate Students* by John *Swales* and Christine *Feak* (*Swales/Feak* ²2004), which would provide input and exercises on general academic writing issues, and secondly, we would apply the principles of elements drawn from Michael *Halliday*’s systemic functional linguistics to analyse academic texts selected by the students from their discipline in order to highlight the lexicogrammar used therein. This article concentrates on the second track of the course, the text analysis.

2. Underlying concepts

I have no desire to ‘teach my grandmother to suck eggs’, however, perhaps a short explanation of the salient concepts may ease later comprehension.

In brief, Systemic Functional Linguistics (SFL) sees language as a system of choices made within the constraints of context (*Coffin* et al. 2009: 213; *Butt* [et al.] 2001: 3–4). In the case of academic writing, the context might consist of a context of culture such as international academia, and a context of situation, which might be the construction of knowledge through the act of publishing articles for peer review. The parameters of the context of situation are known as the register variables; field, tenor and mode, where field is the subject matter of the text, tenor the relationship between the writer and reader and mode the type of text being made in terms of its medium of transmission (*Coffin* et al. 2009: 213; *Butt* [et al.] 2001: 4; *Derewianka/Jones* 2010: 7). Strongly connected to the field of any text is the concept of transitivity. In SFL this is commonly referred to as “who or what is doing what to what or whom, when, why and how” and manifests itself at the level of clause in terms of the participant(s) of the clause, the type of process (verb) and any included circumstances (prepositional phrases) within that clause (*Egkins* 2004: 110–111; *Purser* 2000 cited in *Lillis/McKinney* 2003: 61). For example, the clause

“The twelve long torque to yield head bolts are tightened with a torque wrench”
Teaching advanced writing

has a participant, process, circumstance structure, consisting of the participant “The twelve long torque to yield head bolts”, the process “are tightened”, and the circumstance “with a torque wrench”. Alternatively, the clause

“In former times, bolts of a non-yielding nature were used extensively”

has a circumstance, participant, process, circumstance structure, consisting of the circumstance “In former times”, the participant “bolts of a non-yielding nature”, the process “were used” and the circumstance “extensively”.

SFL provides the tools and metalanguage necessary to analyse language in detail (SCHLEPPEGRELL 2010: 26; DARE 2010: 24). So, we can further analyse each of the three components from the first example. Returning to the first example, the initial participant

“The twelve long torque to yield head bolts”

is a nominal group consisting of the Deictic “The”, the Numerative “twelve”, the Epithet “long”, the Classifiers “torque to yield” and “head”, and the Thing “bolts”. The process “are tightened” is a material process construing doing or happening and the circumstance “with a torque wrench” is a manner circumstance indicating the means by which something is carried out (cf. BUTT [et al.] 2001: 45–75).

In the second example given, the circumstance “In former times”, is a circumstance of time answering the question: When? The participant “bolts of a non-yielding nature” is a nominal group consisting of the Thing “bolts” and the Qualifier (postmodification) “of a non-yielding nature”, the process “were used” is a material process (see above) and the circumstance “extensively” is a circumstance of extent (ibid).

It is, of course, possible to analyse this language in much more detail, and SFL allows us to do this, but given the constraints of the course (see below), it was decided that this would suffice.

Another important concept is that of discourse community. This is a community of practitioners, in our case, academics or perhaps to refine it further, biotechnologists involved in research, or similarly active electrical engineers, etc. SWALES (1990: 24–27) outlines a discourse community as involving the existence of:

I. A broadly agreed set of common goals
II. Mechanisms of intercommunication
III. Participatory mechanisms for the provision of information and feedback
IV. The use of, and therefore the ‘possession’ of, one or more genres
V. The use of specific lexis [lexicogrammar]
VI. A membership with a suitable level of expertise in the content and discourse of the community

It is commonly held that the language conventions adopted by any discourse community can only be changed by members of that discourse community. Outsiders who do not adhere to the conventions will not be taken seriously by that community (Hyland 2006: 21). Thus, it can be viewed to be of considerable import that students, as budding
researchers, have the tools and knowledge needed in order to identify relevant discourse community language conventions.

Given the obvious constraints imposed by a 14-week semester and a course meeting for only one one-and-a-half hour session a week, coupled with the high probability that the concepts and metalanguage of even simple SFL would be entirely new to the students, it was decided to restrict the text analysis part of the course to an analysis of the transitivity and nominal grouping of excerpts selected from academic texts. It was felt that this would give the participating students a good introduction to the application of SFL text analysis techniques whilst at the same time, hopefully, increasing their awareness of language conventions and improving their critical reading skills in terms of becoming aware of the ways in which writers use language to their ends.

3. The analysis (steps)

In order to carry out text analysis based on the principles described above, the students were asked to select an academic article from their discipline that they felt to be of good quality. This they did for homework after the first week of the semester and brought the selected articles with them the second week. After a brief look at the role of the clause as being “the central processing unit in the lexicogrammar” (HALLIDAY/MATTHIESSEN 2004: 10) and equally briefly considering how to identify clause boundaries, the students were then asked to choose an approximately 100-word long excerpt (complete paragraphs) from their selected academic articles and break this excerpt up into its component clauses. Students conferred with their neighbours on this clause identification exercise and I, as the class teacher, offered input as necessary. Once completed, it was an easy next step for the students to highlight the processes (verbs) within their clauses.

In week 3 of the semester, the concepts of participant, process and circumstance, the building blocks of the SFL notion of transitivity, were introduced. Students re-examined their research article excerpt clauses, identified participants, processes and circumstances in them and looked at the frequency of structures in terms of the order that these elements occurred within the clauses. This data was collated in order to identify the most common clause structures both within the individual excerpts and across the range of article excerpts selected.

The next step in the analysis was to consider the six process types that SFL identifies. These are material processes (verbs of doing, happening, etc), relational processes (verbs of attributing and identifying), behavioural processes (e.g. looking, watching, listening, worrying, etc), verbal processes (saying, asking, etc), mental processes (sensing, thinking, wanting, feeling, etc), and existential processes (existing) (HALLIDAY/MATTHIESSEN 2004: 301). Again, the students turned to their text excerpts, identified the various process types within and reported on the frequency of occurrence.

Finally in the text analysis track, we looked at the nominal groups that form the participants of clauses. SFL identifies various sub-categories within nominal groups and
labels them Deictics (the, a, etc), Numeratives (one, seven, second, twenty-seventh, etc), Epithets (describe a quality of the Thing), Classifiers (establish the Thing as a member of a class), Things (the nucleus of a nominal group) and Qualifiers (qualify the Thing in more detail in the form of postmodification) (Butt et al. 2001: 66–69; also cf. Dare 2010: 21), whereby the Qualifier in a nominal group can range from being a simple phrase to being itself an embedded clause complex (Halliday/Matthiessen 2004: 323). This identification of the parts making up participant nominal groups is quite revealing in terms of highlighting how these building blocks combine to communicate dense information in an academic text. This stage of the analysis was followed up by a writing exercise in which the students deliberately tried to apply these concepts in a short written text of their own.

Of course, the ultimate aim of the “Writing for Study and Research” course is to improve students’ academic writing. To this end the participants were asked to carry out a small-scale research project and write a short (6 page) research paper on this project. They were specifically asked to show awareness of and apply the ideas that the analysis had revealed. In order to implement teacher guidance and feedback during the writing process, individual tutorial sessions were arranged towards the end of the semester. Students sent me their research article-in-progress a few days beforehand, giving me the chance to read and prepare comments and suggestions. We then met on a one-to-one basis to briefly discuss the writing as it stood. The final, finished research paper was handed in for assessment shortly after the end of the semester.

4. The analysis (findings)

As outlined above, the first step in the text analysis was to identify the participants, processes and circumstances within the clauses of the selected text excerpts and to report on the order in which they occur to construct a clause (clause structure). This data was collected and is shown in the table below (Fig. 1, page 60).

Figure 1 shows that this first step of the analysis revealed the clause structures of participant, process, circumstance and participant, process, participant to be by far the most prevalent. The next nearest clause structure (participant, process) has only one third the frequency of the structure participant, process, participant. Furthermore, the number of clauses beginning with a participant (67) is far in excess of those beginning with a process (11) or with a circumstance (10). Looking at the individual disciplines, the mechanical engineering, biotechnology and the electrical engineering text excerpts follow the general pattern, whilst the one chemistry paper looked at seems more balanced between participant-first structures and process-first structures.
The next analysis step was to identify the process types used in the excerpt clauses of our selected articles. This we collated as a class, revealing the following:

Our text excerpts contained:

- 58 material processes (53%)
- 23 relational processes (21%)
- 12 verbal processes (11%)
- 9 behavioural processes (8%)
- 6 mental processes (5%)
- 2 existential process (2%)

As can be seen, more material processes were used than all other process types put together. This reflects the practical nature of the chosen text pieces, which are largely concerned with doing and happening phenomena. Relational processes also appear to a significant extent in their attributing and identifying role. Other process types appear to be of less to little significance. This distribution was found to be similar across all of the text pieces and disciplines involved.

The final stage in the analysis was to isolate the participant nominal groups from the selected text excerpt clauses, to identify their component parts in terms of Deictics, Numeratives, Epithets, Classifiers, Things and Qualifiers and to quantify the frequency
of occurrence of the various structures revealed. Whilst each student looked at the structures in their chosen text from their discipline, we once again collated the data to show the following:

<table>
<thead>
<tr>
<th>Structure</th>
<th>Frequency (%) of participant structures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thing / Deictic, Thing / Numerative, Thing</td>
<td>35</td>
</tr>
<tr>
<td>Classifier, Thing / Deictic, Classifier, Thing</td>
<td>22</td>
</tr>
<tr>
<td>Thing, Qualifier / Deictic, Thing, qualifier / Numerative, Thing, Qualifier</td>
<td>18</td>
</tr>
<tr>
<td>Classifier, Thing, Qualifier / Deictic, Classifier, Thing, Qualifier</td>
<td>7</td>
</tr>
<tr>
<td>Deictic, Epithet, Thing, Qualifier</td>
<td>7</td>
</tr>
<tr>
<td>Epithet, Thing / Deictic, Epithet, Thing / Numerative, Epithet, Thing</td>
<td>6</td>
</tr>
<tr>
<td>Epithet, Classifier, Thing / Deictic, Epithet, Classifier, Thing</td>
<td>5</td>
</tr>
<tr>
<td>Deictic, Epithet, Classifier, Thing, Qualifier</td>
<td>1</td>
</tr>
</tbody>
</table>

Fig 2: Frequency (to nearest whole percent) of different participant structures from selected text excerpts

The table above shows the occurrence of participant nominal group structures in the analysed text excerpts in terms of percentage of total participant structures. For this purpose it was decided to combine structures consisting of only a Thing with Deictic, Thing and Numerative. Thing structures (e.g. wing, the wing, two wings). Equally Classifier, Thing and Deictic, Classifier, Thing structures (e.g. resultant forces, the resultant forces) were combined to one category and so on. As can be seen, over half of all participant structures analysed were relatively simple structures consisting of a Thing, either alone or in combination with a Deictic or Numerative, or in combination with a Classifier or Deictic and Classifier. However, 33% of all structures analysed included postmodification in the form of a Qualifier, while 19% included an Epithet.

When we look at the findings of this simple transitivity analysis, we see that the most common structure identified is that having a participant, process, circumstance, or participant, process, participant structure, containing a material process and with relatively simple Thing or Classifier, Thing based participants possibly combined with a Deictic or Numerative. Examples of such structures are clauses like:

- **Cells align in random fashion** – (participant, process, circumstance) with the Thing participant “Cells”, the material process “align” and the circumstance “in random fashion”.
- **This unit varies the engine speed** – (participant, process, participant) with the Deictic, Thing participant “This unit”, the material process “varies” and the Deictic, Classifier, Thing participant “the engine speed”.
However, participant nominal groups featuring postmodification in the form of a Qualifier also occur with significant frequency, as do relational processes, giving clauses like:

- *The efficiency of conventional combustion engines used in cars is 20%* – (participant, process, participant) with the Deictic, Thing participant “*The efficiency*”, being postmodified with the Qualifier “*of conventional combustion engines*”, the relational process “*is*” and the Numerative, Thing value participant “*20%*”.  

- *A spectrometer capable of creating drive fields with 10kHz, 25kHz, 50kHz and 100kHz frequency and up to 25mT amplitude plotted the performance of typical MPI tracer particles* (participant, process, participant) with the Deictic, Thing, Qualifier participant “*A spectrometer capable of creating drive fields with 10kHz, 25kHz, 50kHz and 100kHz frequency and up to 25mT amplitude*”, the material process “*plotted*” and the Deictic, Thing, Qualifier participant “*the performance of typical MPI tracer particles*”.

In fact, when we look at this final example we see that Qualifier postmodification is used to build large, dense nominal groups which can be combined into effective academic clauses with the use of a fairly simple process verb. It should be noted, however, that these are merely the most common clause structures identified here. Clauses beginning with a process or a circumstance still occurred at a frequency in excess of 10% each. This suggests that whilst students might be well-advised to develop the clause structures outlined above in their writing, they should not do it to the exclusion of all else.

5. Students’ writing

The students produced a number of written pieces themselves over the duration of the course, culminating in a short research paper based on a small-scale research project of their own. Of course, sweeping conclusions are impossible to draw given that there is no hard data on the state of the students’ writing before they began the course. Nevertheless, a look at whether the underlying characteristics of academic writing suggested by the conducted SFL analysis of the research articles can be identified in the students’ writing is surely of some merit. Below are some one-paragraph excerpts from the final research papers handed in by the students, together with some comments on the applied principles. The anonymity of the students is preserved to the best of my ability.

**Student 1 (Biotechnology)** – this student placed in the lower ranges of the CEFR C1 level (all students must take a placement test before enrolling in courses in our system), but has since completed several English courses at this level.
“P. aeruginosa metabolizes glucose via the pentose phosphate pathway or the Entner-Doudoroff pathway, although the former one is favoured. The glycolysis is inactive as the microorganism lacks the enzyme phosphofructokinase. The further degradation happens through the citric acid cycle and the anaplerotic reactions accomplish functions of the production of NADPH and refilling intermediates of the citric acid cycle. The isocitrate lyase enables the use of the glyoxylate shunt, an alternative pathway of the tricarboxylic acid cycle. The metabolic flux analysis indicates the metabolic similarity of the P. Aeruginosa strains.”

The research article handed in by this student was deemed to be of a high standard when assessed using the grading criteria applicable for the CEFR C1 level. This excerpt consists predominantly of participant, process, participant, structures. Participants tend to be fairly simple Deictic, Thing or Deictic, Classifier, Thing structures, but some use of Qualifiers is shown, mainly with prepositional “of” phrases. The processes used are predominantly material processes, with two examples of the relational process “is”.

**Student 2 (Biotechnology)** – this student placed at CEFR C2 level and has completed at least one course at this level previously.

“LC-MS/MS measurements are a commonly used method to analyse the metabolome of cells. The determination of the concentrations through the peak area obtained in the mass spectrometer are, however, prone to errors. The use of a C-standard containing all metabolites in a uniformly C-labelled form can reduce these errors significantly, providing a more realistic picture of the metabolome. In this work, a C-standard was produced by a cultivation of C. glutamicum on C-glucose.”

The research article handed in by this student was also of a high standard, even when assessed against CEFR C2 level criteria. This excerpt displays mainly participant, process, participant structures with the one example in the final sentence of a circumstance, participant, process, participant structure highlighting the circumstance “In this work”. The participants show frequent use of postmodification by Qualifiers, which can be complex. The processes used are here more evenly split between material processes and the relational processes of the first two clauses.

**Student 3 (Biotechnology)** – This student, placed at the lower end of the CEFR C1 level, has completed several courses at this level with lower pass grades, but still struggles to produce conventional-sounding language.

“A. tumefaciens glycerol aliquots were transformed with plasmid-DNA and streaked on YMB-medium agarose plates with antibiotic. The antibiotic is for the selection of the transformants. The plates were incubated for three days at 38°C. One colony was further inoculated in liquid medium (YMB/YEB) with antibiotic and incubated for 24 hours at 38°C and 22 rpm. The liquid cultures were primarily to check the transformation for success. A positive clone was then cultivated for a suspension to transform plant material.”
This excerpt consists primarily of participant, process, circumstance structures, and the processes used are mainly material with some use of relational processes. These, as already stated, seem to be standard for such writing. The participants employed are very simple and no use of Qualifiers is made. There is a tendency towards simple clause complex sentences and these factors lend a feeling of a lack of sophistication to the paragraph. Below is another paragraph from the same student.

“For the incorporation of the plasmids into the cells, they have to be chemically competent. To get competent cells, they were put into an ice-cold solution. Due to the icy cold, the cells became able to incorporate the foreign DNA. Subsequently, the transformation happens based on a temporary heat shock. In a regeneration medium the cells incubate for 60-90 minutes at 37°C.”

This excerpt consists entirely of clause structures of circumstance, participant, process, followed by either a circumstance or a participant. Again the participants employed are very simple and no use of Qualifiers is made. These factors, combined with the use of simple clause complexes, lend an unconventional air to the language produced.

**Student 4 (Chemistry)** – This student placed at CEFR C1 level and has taken one previous course at this level

“The bar chart in fig. 2 shows the number of articles which were published in the analysed years (hatched) and the percentage of articles dealing with a chemical topic (black). When in 1973 part B of the journal was divided and was about to publish only papers dealing with chemistry, the number of articles about chemistry and the number in total were the same. The bar chart illustrated two points. Firstly, the number of published articles had in 1970 its maximum (of the analysed years) and the number of articles with a chemical topic in 1980. After that the number of articles was falling slightly from 343 (1980) over 281 (1990) to 186 (2000) where it had its minimum. In 2010 the number picked up again to 211.”

Whilst this excerpt features a number of standard structures and has largely well-constructed nominal group participants, there are some elements that stand out as being unconventional. These include the somewhat convoluted circumstance, “When in 1973 part B of the journal was divided and was about to publish only papers dealing with chemistry”, along with the circumstance, participant, process, circumstance, participant structure of “Firstly, the number of published articles had in 1970 its maximum (of the analysed years)” and the, probably quite deliberate, but somewhat clumsy attempt at ellipsis in “the number of articles with a chemical topic in 1980”.

The excerpts above seem to support the findings of the analysis. Students who adhere to the suggested conventions are more likely to produce high quality written work, or at least, high quality written work seems to adhere to the findings of the analysis. This surely supports the idea that increasing awareness of such conventions is of benefit to learners. Another noteworthy point is that the tools of transitivity and nominal grouping as applied here can be used to facilitate critical feedback on students’ writing and may be highly beneficial in pointing out where mistakes are being made.
6. Conclusions and further research

The research and experience presented here are undeniably still in their early stages. However, based on the experience gained so far in this course and on that gleaned from recent publications (cf. IDDINGS/DE OLIVEIRA 2011; COFFIN 2010; BANKS 2002), it appears that the application of elements of grammar taken from SFL in the form of text analysis to inform writing can be advantageous for learners. The research and experience outlined above suggest that the identification of natural clause structures and the highlighting of the role and structure of nominal groups in academic writing offer benefits for advanced learners. These suggestions are further supported by feedback from the course participants, which was encouraged in the form of an informal group discussion and anonymous written comments on a questionnaire form.

Students stated that they felt the reading and analysis of articles from their own discipline was very useful and that the application of SFL theory helped them to think about how such texts are written. Furthermore, they claimed applying such theory to analysing what others have written to be a positive experience and believed it had led to useful learning. Another element of the course that was praised by the students was the peer appraisal/correction of text pieces they had written. They said that peer correction was enjoyable to carry out and that it was very useful to see different styles and approaches to writing. Again it was stated that SFL had given them tools to identify what was wrong in other people’s writing. Finally, the individual tutorial sessions were also seen positively with the comment that the feedback received there was much better than red ink on a piece of paper.

It is however, important to recognise the limitations of this research so far. The degree to which developing awareness of structures feeds in to actually improving students’ writing has not been approached. Whilst it does not seem unreasonable to suggest that such development of awareness would lead to learning and improved language production, no before and after comparisons have been made to date. It is anyhow seen as highly debatable whether before and after comparison would reveal reliable data given the limited number of participants thus far and the myriad of other uncontrollable parameters that might affect writing performance.

English for academic purposes has attracted considerable research attention in recent years. Amongst others, publications from HYLAND (2006), HYLAND/BONDI (2006) and the already mentioned Swales and Feak (2004) have served to significantly further understanding in this discipline. It appears however that the aim of identifying varying discourse community conventions in terms of SFL-based transitivity and nominal grouping in academic articles from disciplines relevant to a technical university setting needs much more data and analysis. The acknowledgement of the existence of discourse community conventions suggests it to be beneficial for learners to analyse text from their own discipline, however there is a need to collect data on the conventions within various sections of research articles from various fields. What language conventions exist in abstracts from the discipline of mechanical engineering, and do these vary from those from biotechnology? How do these differ from the conventions

---

FLaL 44 (2015) • Heft 1
found in methodology sections, or discussion sections, etc, of articles stemming from various disciplines?

Finally, SFL offers possibilities for far more detailed text analysis than has been attempted here to date. It would be interesting to see to what extent a more detailed analysis, revealing, for example, the roles of participants in terms of Actors, Goals, Carriers, Attributes, Identified and Identifier (cf. BUTT et al. 2001: 52-59) would be beneficial. Currently, knowledge of SFL is not widespread amongst the students concerned. This has the benefit that when they are asked to apply the concepts in the manner outlined above, they are largely viewing language from an entirely different framework to their previous language learning experience. Provided they are open to this, and this research suggests that they are, this should lead to learning. The question remains as to how many new concepts and how much new metalanguage is appropriate in a course limited to 90 minutes a week for 14 weeks.

Literature

BANKS, David (2010): “Systematic Functional Linguistics as a model for test analysis”. In: Groupe d’Etude et de Recherche en Anglais de Specialite. La revue du GERAS.


URL: http://oro.open.ac.uk/25026/1/


URL: http://oro.open.ac.uk/25026/1/

DEREWIAKWA, Beverley / JONES, Pauline (2010): “From traditional grammar to functional grammar: bridging the divide”. In: COFFIN, 6–17. URL: http://oro.open.ac.uk/25026/1/

URL: http://books.google.de/books?id=9BqCtpYdeiwC&printsec=frontcover&hl=de&source=gbs_ge_summary_r&cad=0#v=onepage&q&f=true [accessed: October 30 2014]


