Corpus linguistic studies of professional communication: Metaphors in financial analyst reports

Winnie Cheng

Alternative pedagogies in the English language & communication classroom

The 4th CELC
National University of Singapore
27-29 May 2013
About this talk

Project title: The Discourse Representations of Financial Analyst Reports (G-U838)

- **Approaches to linguistic research:** Corpus linguistics & critical discourse analysis
- **Research methods:** Textual analysis
- **Corpus search programs:** Wmatrix & ConcGram 1.0
- **Data nature and types:** Direct, naturally-occurring financial analyst reports
- **Implications and applications of research results:** Applied language studies & professional communication
In the 21st century, financial services have increasingly become global business ventures.

- **Credit Suisse:** more than 500 offices in fifty countries including Switzerland, the United Kingdom, Turkey, Brazil, Thailand, and Hong Kong

- **The Goldman Sachs Group, Inc.:** major financial centres in the United States, Canada, Germany, France, Italy, Russia, India, China, Japan, and Korea

- **Barclays:** global offices in the United States, the United Kingdom, Dubai, China, Singapore, and Australia
The genre of financial analyst reports

An important genre in the financial services industry is the financial analyst report (Ettredge et al., 2001)
- written by in-house or out-sourced researchers or analysts employed by financial services companies
- often present an assessment of economic performance and a forecast of future earnings (Orens and Lybaert, 2007)
- a significant influence on market participants
Communicative purposes of financial analyst reports

In times of financial changes, stress, crisis and post-crisis, financial analyst reports perform more and varied communicative purposes:

- enacting various discourses of analyses, forecasts and justifications
- utilizing different expert discursive resources to achieve personal, organisational, professional, institutional, and socio-cultural goals

(Huckin, 1997; Baker, et al., 2008)
Conceptualisations of study

- enacting **various discourses** of analyses, forecasts and justifications

- utilizing different **expert discursive resources** to achieve personal, organisational, professional, institutional, and socio-cultural goals
Metaphors

In financial services, an important linguistic means of constructing organisational identities, professional ideologies, and social realities is metaphors (Charteris-Black, & Ennis, 2001; Charteris-Black, 2004; Koller, 2008; Morris, et al., 2007; Rojo, & Orts, 2010).
Metaphors

Metaphors play different roles in various kinds of discourse, primarily:

- conveying ideologies
- conveying information
- filling lexical gaps
- decoration and hyperbole
- expressing emotional attitudes

(Goatly, 2011)
Expressing emotions

**Emotions:** “valenced reactions to events, agents, or objects, with their particular nature being determined by the way in which the eliciting situation is construed” (Ortony, Clore, & Collins, 1988: 191).

The use of metaphors to express emotions in financial texts is a valuable field of study.
Objective of study

To compare the metaphor use in two English corpora that comprise the Hong Kong and European financial analyst reports of 2011.

Specifically, to study the use of metaphors which describe and express the emotions relating to the description, analysis and prediction of the financial situation and investment environment in 2011-2012 during the European financial crisis.
corpus linguistics + critical discourse analysis
## Corpus linguistics

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<thead>
<tr>
<th>Corpus A</th>
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<tr>
<td>word</td>
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Corpus linguistics

‘ve been recently thinking about becoming a teacher. But I’m not sure about that. Teach it so much better than our actual at school. I think actually my art that other than when you’re an English teacher. Got really mad at my German teacher. I really, really hate French and the German is Julie and my mother is a gym teacher. Yeah I have a very nice stuff like that. Maybe you have a nice because I have an English Spanish. Yeah it’s important what the kind of worked on it and then the...
Critical discourse analysis

- explanation of the relationship between interaction and social context
- interpretation of the relationship between text and interaction
- description of text

(Fairclough 1992)
Financial analysts: in possession of organizational, institutional and discursive power due to their control of “a social occasion, by means of the genre of a text, or by access to certain public spheres” (Baker et al., 2008: 280)

signal power by their deployment of particular linguistic forms within a text
Corpora and corpus linguistic programs
Corpus data

The websites of Bank of China (Hong Kong) (‘Market Information’) and BNP Paribas (‘Economic Research’), Feb 2011 - Jan 2012

**Bank of China (BOC):** one of the top state-owned commercial banks in the People’s Republic of China

**BNP Paribas (BNPP):** the world’s biggest bank in 2011, providing services in Retail Banking, Corporate and Investment Banking, and Investment Solutions.
## Two corpora

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<th>Corpus</th>
<th>Publications</th>
<th>Number of articles</th>
<th>Number of words</th>
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<tr>
<td>Bank of China Corpus (BOCC)</td>
<td>Economic Review (A Monthly Issue)</td>
<td>10 (26.3%)</td>
<td>25,964 (46.42%)</td>
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<td>Financial Daily</td>
<td>6 (15.8%)</td>
<td>1,484 (2.65%)</td>
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<td>Economic and Financial Weekly</td>
<td>9 (23.7%)</td>
<td>7,906 (14.13%)</td>
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<td>Economic and Financial Monthly</td>
<td>10 (26.3%)</td>
<td>12,827 (22.93%)</td>
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<td>Market Spotlight</td>
<td>3 (7.9%)</td>
<td>7,756 (13.87%)</td>
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<td>Total</td>
<td>38 (100%)</td>
<td>55,937 (100%)</td>
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<td>BNPC Paribas Corpus (BNPC)</td>
<td>Conjoncture</td>
<td>24 (5.5%)</td>
<td>124,098 (21.88%)</td>
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<td>EcoFlash</td>
<td>360 (82.8%)</td>
<td>148,119 (26.11%)</td>
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<td>EcoWeek</td>
<td>46 (10.6%)</td>
<td>214,478 (37.81%)</td>
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<td>Economic and Market Monitor</td>
<td>5 (1.1%)</td>
<td>80,496 (14.20%)</td>
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<tr>
<td></td>
<td>Total</td>
<td>435 (100%)</td>
<td>567,191 (100%)</td>
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Data analysis programs

- Wmatrix
- ConcGram 1.0
The Wmatrix tag wizard takes you automatically through the POS (CLAWS tagger) and Semantic analysis (USAS tagger) stages, and produces frequency lists from your text file. Please do not run large texts (e.g. with more than 100,000 words) through the tag wizard. These are better run off-line and loaded into Wmatrix afterwards. Please get in touch with Paul to do this.

**File types:**
The raw text type is plain ASCII, as created by Windows notepad for example. If you have a MS Word file, you should convert it to a .txt file before uploading to Wmatrix. Open the file in MS Word, select ‘save as’ and then the file type should be set to ‘text only with line breaks’ with MS-Word 2000 and earlier. If using MS-Word 2003 select ‘plain text’, then in the dialog box click ‘insert line breaks’ and ‘allow character substitution’ and then save. This last option is required for replacing Windows apostrophes for ASCII equivalents. Raw files will have their contents enclosed in a `<wmatrix>` tag to enable CLAWS tagging. Wmatrix is also capable of dealing with text in HTML, SGML or XML format. The taggers do not require parsable encoding, it is necessary only that left and right angled brackets are well-balanced. Further input format guidelines are available including for example how to avoid problems with less-than and greater-than symbols in the input text.

**One text per folder:**
If you do not specify a folder, one will be created with a unique name. It is recommended that you use a new folder for each file. If your corpus consists of more than one file, then we recommend concatenating the files together first.

**Large texts:**
Please do not run large texts (e.g. with more than 100,000 words) through the tag wizard. These are better run off-line and loaded into Wmatrix afterwards. Please get in touch with Paul to do this. Since Wmatrix does not pre-index the texts, speed of concordancing is proportional to the text size. Producing a concordance from larger texts may take up to 1 minute and may cause the web browser to timeout. A good rule of thumb is that texts should not exceed 1 million words (even when run through the tag wizard offline).
**Wmatrix**: A web-based software tool for corpus analysis and comparison

- Developed by **Paul Rayson** since 1998

- A web interface to the [USAS](#) and [CLAWS](#) corpus annotation tools for automatic semantic tagging and part-of-speech (POS) tagging

- Standard corpus linguistic methodologies, e.g.
  - frequency lists
  - concordances
UCREL* Semantic Analysis System (USAS)

A framework for undertaking the automatic semantic analysis of text

- 21 discourse fields
- 232 semantic categories
- 453 tagsets

Semantic field

- By grouping related words and multi-word expressions into a conceptual category
  
  - *UCREL: University Centre for Computer Corpus Research on Language, Lancaster University
21 Discourse fields

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<td>general and abstract</td>
<td>the body and the individual</td>
<td>arts and crafts</td>
<td>emotion</td>
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<td></td>
<td>terms</td>
<td>individual</td>
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<td>food and farming</td>
<td>government and public</td>
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http://ucrel.lancs.ac.uk/usas/
ConcGram 1.0
A phraseological search engine

Chris Greaves
ConcGram 1.0 (Greaves, 2009)

• "a search-engine, which on top of the capability to handle constituency variation (i.e. AB, ACB), also handles positional variation (i.e. AB, BA), conducts fully automated searches, and searches for word associations of any size." (Cheng, Greaves, & Warren, 2006: 413):

– i.e., searches for concgrams
won't know is that she's never bothered to ask because she's not talking so it's okay while there but and you've got to have the front door [unclear] because there's a bar at back so these are special the taxi. He goes well, let me read it. Because, because I'm a complete stranger so I don't have to spend you see, J Julie's likely to do quite a lot because she's got to stay there so you've got to home, Rowan's mother wouldn't let her have it because it was too revealing and so Penny was stuck with the morning Yeah, no it wouldn't be tomorrow because I think my mum's working so Yeah It doesn't No, it's not going to cost her any more, because it's included in the plan, so it's not going to with Chris and Chris insisted that he did it. Because he's got a plan of the site so he wants to know give you a bit of my advice [unclear] on a lead, because er you haven't had the call so you ought to be scratch in Alan's well equipped kitchen. But because Linda has to stop half way through so that other the movement and people need labels. I think, because the society does want to categorise people so 1960s were in the lowest housing class. This was because they generally had low and insecure incomes, so he, was he so naughty to you? so Richard's crying because he'd been hitting him the face. He's howling and get the land. Er, so I just make that point because of the debate last week. Thank you. Thank you. I'll put those down, so let's find some of these because obviously you won't have met them all, maybe. hundreds of years. So he brought his family over because negotiations were taking so long, and he at this time. So it must be that one Mm mm because the other chap comes about half past eight in the that's fine, so I'll have to get it in soon because I won't be able to get him in till about for [unclear] So to get this You had to pay this, because when it came to the end of the quarter, you had worried so I thought well I might as well go up because I shall start to worry and things get out of effort so that they will fear losing their jobs because the alternative jobs are less well paid (see that. So you, you've got to think about those, because if you want to survive, and you also want to go it. So I think that that's an important point, because I do believe that weight is placed by the then we can talk about lobbying Parliament, because we can't do it without them. We need a focus before anybody jumps for it, think about it, because it's boring. Now down to business I would like
A sample concordance of ‘political/Hong Kong’ in Western Media Corpus (2006-2008)

1. the Basic Law to increase China's control over political reform in Hong Kong. It ruled that the chief
2. young talent. In response to questions about political liberties in Hong Kong under Chinese
3. report aggressively on environmental and political issues, both in Hong Kong and on the mainland.
4. club in the good old British tradition - not political in any sense". HONG KONG OVERVIEW - HONG KONG
5. to introduce more accountability into the political system." At times in Hong Kong's recent history
6. in protest. It was the beginning of a period of political turmoil that forced the Hong Kong government to
7. to create the conditions for the emergence of a political class is the Achilles heel of Hong Kong's system.
8. down the streets, muzzling any whisper of political dissent," says the AP. Today, Hong Kong is a
9. years, from where I sat as Chief Secretary, the political transition went extremely well. Hong Kong wasn't
10. WU: There seems to be a lot of discontent on the political front. In the 1960s and '70s, when Hong Kong
11. reality becomes political reality." And the political reality, according to Lee, is "All the Hong Kong
12. of Commerce, An Min, that Hong Kong political forces are wrong "to think that they are
13. go ahead unhindered every year in Hong Kong. Political and news websites are not blocked by censors.
14. go ahead unhindered every year in Hong Kong. Political and news websites are not blocked by censors.
15. worries that China would restrict Hong Kong's political and religious freedoms. When the celebration
16. ago. The frozen nature of Hong Kong's political system is just one, striking, instance of how
17. years on China has managed to make Hong Kong's political demands seem an almost parochial concern.
18. contest marks a major event in Hong Kong's political development. Such an event would carry risks for
19. censor themselves. Predicting Hong Kong's political future is difficult because Beijing has yet to
20. unfulfilled promises regarding Hong Kong's political integrity. Her re-entry into politics as a
21. China? WU: Nothing has moved much on Hong Kong's political front apart from the nearly daily demonstrations
22. a study on press practices in Hong Kong by the Political and Economic Risk Consultancy (PERC) that found
23. revolution. Hong Kong's was a unique political revolution. Hong Kong's was a unique political
24. of government, that Hong Kong's was a unique political system: undemocratic but free. China was, and
25. the social strata of Hong Kong and the balanced political participation of all social circles and the
26. In that period Hong Kong has endured mixed political and economic fortunes, the key message being that
27. election show that Hong Kong people prefer more political competition," says Ma Ngok, a professor of
28. In that period Hong Kong has endured mixed political and economic fortunes, the key message being that
29. At times in Hong Kong's recent history its political system has been a matter of global interest: at
30. guarantee Hong Kong's prosperity and render political with Hong Kong. Here, as in Hong Kong, political development has been distorted by the
31. of a Hong Kong company with strong Chinese political connections. The same concerns almost lost the
32. that Hong Kong is an economic city" not a "political city". Why then is politics taking centre stage
33. Hong Kong's freedom to push ahead with political reform and a third NPCSC interpretation in 2005
34. of Hong Kong itself, which is not so much a political entity as a corporation -- a subsidiary of China.
35. Hong Kong, which could serve as a laboratory for political change on the mainland, as it earlier served as
36. Hong Kong, Chan is less concerned with the political climate of Hong Kong's handover as a main factor
37. 2047 Hong Kong would keep its own economic and political system and enjoy autonomy in everything except
Three-word concgram: ‘Asia/world/city’
Corpus analysis procedure
Discourse field of ‘emotion’

To identify the metaphorical expressions which describe and express the emotions about the description, analysis and prediction of the financial situation and investment atmosphere in 2011-2012.

The discourse field of ‘emotion’ was selected.
21 discourse fields (Wmatrix)

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<tr>
<td>food and farming</td>
<td>government and public</td>
<td>architecture, housing and the home</td>
<td>money and commerce in industry</td>
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<td>entertainment, sports and games</td>
<td>life and living things</td>
<td>movement, location, travel and transport</td>
<td>numbers and measurement</td>
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<td>substances, materials, objects and equipment</td>
<td>education</td>
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Lexical words in ‘emotion’ discourse field

Lexical words (vs. grammatical words) in the semantic categories of the discourse field of ‘emotion’ were selected based on frequencies of occurrences.
Concordances for lexical words

*ConcGram 1.0* (Greaves 2009) to generate concordances for lexical words in semantic categories of ‘emotion’ discourse field

Concordance lines analysed by researcher for basic use vs. metaphorical use of words/word co-occurrences (Pragglejaz Group 2007)
Metaphor Identification Procedure (1)

- A set of steps to determine whether a word conveys metaphorical sense in the context:
  - the entire text-discourse read to build an understanding of the meaning
  - each lexical unit in the text checked to determine whether its meaning in the context is less basic than that in other contexts
  - If a contrast between the contextual meaning and the basic meaning, the lexical unit marked as metaphorical

basic meaning: “more concrete, related to bodily action, more precise and historically older” (Pragglejaz Group 2007: 3)
e.g., *Financial market tensions could spill over to the real economy*. (BNPPC)

‘spill’:
- ‘flow or cause to flow over the edge of its container’ *(Concise Oxford English Dictionary 2011: 1390):* physical movement
- widespread influence due to the spread of emotion, the agent of action being ‘tensions’

Contextual sense of ‘spill’ more abstract than basic sense → metaphorical
Metaphor reference

The METALUDE online database consulted for reference when labeling the source domains and interpreting metaphorical meanings to provide a stronger basis for metaphor claims.

- **METALUDE** = Metaphor at Lingnan University, Department of English

- 2002-2005. Dr. Andrew Goatly & LLE Project, Lingnan University
~ Introduction to our Project
~ How to use our Database
~ Accessing our Online Database
~ Map of Root Analogy
~ Submit new metaphors
~ Contact us

To access our database, click to Register!
Main findings
Shared semantic categories of discourse field of ‘emotion’ in BOCC and BNPPC

1. ‘Worry’
2. ‘Confident’
3. ‘Violent/Angry’
4. ‘Fear/Shock’
5. ‘Emotional Actions, States And Processes General’
6. ‘Sad’
7. ‘Discontent’
8. ‘Liking (+++)’
9. ‘Liking’
10. ‘Happy’
11. ‘Content’
12. ‘Calm’
Semantic categories exclusive to BNPPC

1. ‘Dislike’
2. ‘Liking’
3. ‘Bravery’
Words co-occurring with ‘worry’ lexical words in BOCC: different agents

**Investors (16.7%),** e.g.
- uncertainty of Middle-East and North Africa region worried people
- investor worries on the prospect of potentially massive losses
- investors worried about the substantial high debt level

**Countries and cities (6.41%),** e.g.,
- Hong Kong (e.g., *Hong Kong should not worry too much*)
- German and France (e.g., *the public debt and deficit levels of German and France are also worrying*)
- Spain (Spain was the most troubled country)
BNPPC vs. BOCC

BNPPC: a greater variety of source domains mapped onto CONFIDENCE (64 instances of *confidence* are in metaphorical use)

BOCC: only 2 instances of *confidence* are in metaphorical use
Semantic prosody of ‘confidence’ in BNPPC

50% of the metaphors that conceptualize the target domain CONFIDENCE in the BNPPC carry the semantic prosody of ‘diminishing’, e.g.,

- the weakening of confidence
- lack of confidence
- eroded the trader’s confidence
**Conclusions (1)**

- **Emotion words** tend to cluster together (Oster 2010)

- Recurrence of particular types of emotions (discourse field ‘emotion’ and related semantic categories)

- How the conceptualizations of emotion words reflect the market turbulence in 2011
Conclusions (2)

How the bank financial analyst reports are connected to the news reporting of global economy and bank annual reports in relating to the description, analysis and prediction of the financial situation and investment environment during February 2011 and January 2012
Conclusions (3)

- Metaphors help to promote corporate core values

- Metaphors help to portray emotions in the financial analyst reports

- ‘discourse’, the notion of “little d”, referring to language at the syntactic level and its use at the contextual level (Gee 1990), is crucial for the writer or speaker to consider when choosing metaphors for expressing particular emotion concepts
The methodology employed in this corpus-based research study could be considered for other studies of metaphors and the research findings are useful in English language and communication classrooms.


References


