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Brigitte Nerlich & Nelya Koteyko

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Carbon Reduction Activism in the UK: Lexical Creativity and Lexical Framing in the Context of Climate Change

Brigitte Nerlich & Nelya Koteyko

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This article examines discourses associated with a new environmental movement, "Carbon Rationing Action Groups" (CRAGs). This case study is intended to contribute to a wider investigation of the emergence of a new type of language used to debate climate change mitigation. Advice on how to reduce one's "carbon footprint," for example, is provided almost daily. Much of this advice is framed by the use of metaphors and "carbon compounds"—lexical combinations of at least two roots—such as "carbon finance" or "low carbon diet." The study uses a combination of tools from frame analysis and lexical pragmatics within the general framework of ecolinguistics to compare and contrast language use on the CRAGs' website with press coverage reporting on them. The analysis shows how the use of such lexical carbon compounds enables and facilitates different types of metaphorical frames such as dieting, finance and tax paying, war time rationing, and religious imperatives in the two corpora.

Keywords: Environmental Activism; Social Movements; Climate Change; Lexical Creativity; Metaphor; Framing; Ecolinguistics

Introduction

Since the end of the 1990s (Kyoto Protocol, 1998), global warming and climate change have attracted immense media coverage (see Boykoff & Boykoff, 2007; Carvalho, 2005; Carvalho & Burgess, 2005; Weingart, Engels & Pansegrau, 2000). Advice on how to reduce one's carbon footprint is provided almost daily in newspapers, in advertisements, in books, on international, governmental and non-governmental websites, and even in soap operas. Much of this advice is framed by using "carbon

Brigitte Nerlich is a Professor of Science, Language and Society at the Institute for Science and Society at the University of Nottingham. Nelya Koteyko is a Research Fellow at the Institute for Science and Society at the University of Nottingham. Correspondence to Brigitte Nerlich, Institute for Science and Society, West Wing, Law and Social Sciences Building, University Park, Nottingham, NG7 2RD, UK. Email: Brigitte.nerlich@nottingham.ac.uk

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compounds"—lexical combinations of at least two roots—such as "carbon footprint," "carbon finance," "carbon sinner," or "low-carbon diet." These are only some of the numerous discursive and metaphorical clusters that have emerged in English-speaking countries around the word carbon as the hub. Some of the most popular compounds have entered the *Oxford English Dictionary* (OED), such as carbon offset and carbon footprint, for which the following (OED, online (1999)) definition is given: "the environmental impact of carbon emissions; the magnitude of this for a particular individual, organization, or community." A whole new language is evolving that needs to be monitored and investigated in order to discover how climate change is framed by various stakeholders, how public attitudes and perceptions are shaped, and what solutions to climate change and global warming are put forward.

Solutions are proposed by intergovernmental bodies, such as the UN's Intergovernmental Panel on Climate Change (IPCC), by national governments, by big corporations, by new venture capital enterprises, such as carbon trading companies, by non-governmental organizations (NGOs) and by individuals, such as George Monbiot in the UK (Monbiot, 2007) and many more (see, for example, Henson, 2008; King & Walker, 2009). Other solutions are proposed by more loosely organized social groups of activists that act as conduits between society and the individual. One social movement has recently emerged and focused on the issue of reducing carbon emissions at the individual and community level, through so-called Carbon Rationing Action Groups (CRAGs). With the emergence of groups such as CRAGS, carbon reduction becomes an individual goal supported by a group ethos, rather than being imposed top-down.

Three recent events have made climate change a topic for global debate yet again, ten years after Kyoto: the most recent IPCC report (2007), the release of Al Gore's film *An Inconvenient Truth* in the summer of 2006, and the *Stern Review on the Economics of Climate Change* published in the autumn of 2006 (Stern, 2006). In this report, economist Sir Nicholas Stern stated that scientific evidence of global warming was overwhelming, with potentially disastrous ecological and economic consequences. To avoid an economic catastrophe, he argued, governments should act now to reduce carbon emissions.

These events have put the issue of carbon mitigation into the public spotlight. Reducing carbon footprints of whatever kind has become an increasingly urgent task in combating climate change on the global and on the individual level. As the UK's *Economic and Social Research Council* has pointed out: "'Carbon footprint' has become a buzzphrase ever since the Stern Review on the Economics of Climate Change was published last October (2006) and, more recently, the latest UN Intergovernmental Panel on Climate Change report was released" (Kollewe, 2007).

In this context the first CRAG was set up, either in the West Midlands in December 2005 or in Islington (London) on December 1, 2006 (two different stories were told on the CRAG website—www.carbonrationing.org.uk). In March 2008, 16 groups were active in the UK, 12 were starting up and one was dormant. Other groups are emerging in the USA and Canada. They use the internet to communicate but also

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meet locally. The English-speaking press began to report on this new movement on December 14, 2006.

Aims and Objectives

In this study, we analyze two small corpora of texts dealing with CRAGs, "Craggers" and "cragging," using methods derived from ecolinguistics, social movement research, and lexical pragmatics. One corpus consists of web material: texts posted on the homepage of the UK CRAG movement on March 4, 2008. The other corpus consists of 19 items published in English-speaking press coverage. This corpus covers UK, USA and even Chinese news items about CRAGs. Both have limitations and further research is needed to corroborate our findings. The news items corpus is quite small, but despite this provides insights into the use of frames and metaphors in news reporting. Our one-shot synchronic analysis of the activists' website obviously does not capture the dynamics of this social movement. It also needs to be stressed that websites do not faithfully represent the beliefs and values of such groups. They only capture one small facet of a group's ideology, a facet that is constrained technologically as well as by the fact that only one or a few enthusiasts produce content for such websites.

Our analysis focuses on the use of carbon compounds and other framing devices, including conceptual metaphors that cluster around such compounds, which are either used to persuade members and prospective members to change their behavior with regard to carbon consumption or to report on such activities. This provides a relatively well-circumscribed case study, which can serve as a pilot study for a bigger project mapping carbon discourses. We aim to: examine the groups' language use, especially their lexical creativity in terms of metaphors and the invention of new "carbon compounds," and the morphologically and semantically creative use of old compounds; assess how the groups' activity is reported and framed in the English-speaking press; and compare the use of compounds and metaphors in the two domains: the activists' own website and the representation of the group's aims and activities in the press in terms of language use and framing.

This linguistic analysis aims to complement other emerging social science research into the public perception of personal carbon trading schemes and related behaviors, where CRAGs are used as a "natural field trial" (see Lunt & Capstick, 2008).

Methods and Conceptual Background

Social scientists have investigated the discourse of environmental politics in general and climate change in particular for many years (Hajer, 1995, 2002; Hajer & Versteeg, 2005; Weingart, 1998). At the same time, research in a sub-field of applied linguistics called ecolinguistics has also begun to study the interaction between language, the environment, and culture. Ecolinguists have used critical discourse analysis to study, talk, and write texts about the environment and environmentalism in order to reveal underlying ideologies (e.g., Harré, Brockmeier & Mühlhäusler, 1999; Killingsworth &

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Palmer, 1992). They have also used insights from cognitive linguistics to study metaphorical framings (Döring, 2003). However, they have so far not studied the influence of compounds on environmental discourses or the influence of environmental discourse on the emergence of new compounds. We advocate an ecological study of compounds as part of ecolinguistics and study their use in two discursive niches: the activists' own website and press coverage of their movement.

Together with discourse analysis, frame analysis has been used, in one version or another, by ecolinguists (Alexander, 2008), social scientists, and those interested in the rhetoric of activism and social movements. According to Entman (1993, p. 53), to frame is "to select some aspects of a perceived reality and make them more salient in a communicating text, in such a way as to promote a particular problem definition, causal interpretation, moral evaluation, and/or treatment recommendation for the item prescribed." Frames (words, metaphors, storylines, and images) can thus "diagnose, evaluate and prescribe" (Entman, 1993, p. 53). They call up attention to some aspects of reality while obscuring other elements, which may promote different reactions in audiences. But not only politicians, but also journalists and advocates use frames. "(F)rames (...) allow citizens to rapidly identify why an issue matters, who might be responsible, and what should be done" (Nisbet & Mooney, 2007, p. 56; see also Nisbet & Scheufele, 2007). As Lakoff and others have shown, metaphors are some of the most potent framing devices (Lakoff, 2004).

Some analysts of media framing have distinguished between "news frames that are constructed by media personnel and issue frames that emanate from other communicator sources and are conveyed or reported in mass media coverage" (Reber & Berger, 2005). This distinction was useful when studying our press coverage sample and the web pages constructed by CRAGs themselves. In both cases we had to distinguish between frames constructed for the purpose of a newspaper article or a website and issue frames that are more widely used in society.

Building on Goffman's (1974) conceptualization of frames, social movement scholars have emphasized the importance of collective action frames (Snow et al., 1986) for mobilizing citizens (Kolker, 2004). These frames help construct a sense of community, identification, allegiance, and shared history (Gamson, 1995; Nelson & Willey, 2001; Snow & Benford, 1992); they influence the perceptions, beliefs, and actions of various target groups, such as media personnel, potential allies, constituents, and the general public (Reber & Berger, 2005). Analysis of frames, however, is often subject to the question of reliability as a number of factors present in any particular context can influence the way people frame an issue or event, which has led some scholars to suggest that framing occurs inside the "black box" of the mind (Johnston, 1995, pp. 218–219).

Consequently, traditional frame analysis tends to rely on inferential assumptions about mental activities, and yields "too much loose interpretation taking place too far from the data." We, therefore, adopt a text-dependent micro-discourse approach (rather than "macro-discourse analysis") emphasizing analysis of words and phrases which mark frames. Following Johnston (1995, p. 237), we hope that this approach will help us achieve a systematic study of the content of social movement frames and

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minimize "the risk of outright misinterpretation." Of course, micro-level discourse analysis has its own limitations, including the potential to miss the broader picture within which the discourse has been framed.

As pointed out above, metaphor is a major framing device (Lakoff & Johnson, 1980; Schön & Rein, 1994). Lakoff uses the study of metaphor to shed light on the way people think and talk; Schön, to shed light on how policies are framed and sold to the public. Lakoff and his followers employ the concept of "conceptual metaphor," Schön and his followers that of "generative metaphor" (Schön, 1979). Both of them studied how thinking, talking, and acting can be framed by such deep-rooted conceptual devices. In the context of climate change, for example, the metaphorical compound "carbon diet" opens up the frame of losing weight and counting calories, and then transfers it onto the issue of reducing carbon dioxide emissions. Frames can also be indexed by a variety of other means, such as numbers or dates (in the context of reporting on avian influenza, the date 1918, for example, opens up the frame of the Spanish flu pandemic which itself can trigger fear or alarm) and stock literary characters or titles (in the context of reporting on genetic modification, references to Frankenstein index the monstrosity frame and references to "Brave New World," the state regulation of human reproduction).

More mundane processes of lexical creativity that go into framing issues, be it in the news, on websites, or in general communication, have been neglected by social scientists, (eco)linguists and social movement analysts. Lexical creativity, such as the creation of novel compounds, is a topic tackled in cognitive semantics on the one hand (Aitchison, 1994) and lexical pragmatics on the other (Blutner, 2002). Lexical pragmatics is a rapidly developing branch of linguistics that investigates the processes by which linguistically specified ("literal") word meanings are modified in use. Both these fields are interested in the systematic and explanatory account of pragmatic phenomena that are connected with the semantic underspecification of lexical items. Take for example, the interpretation of compounds, such as "headache pill," "fertility pill," and "morning after pill" (Atlas, 2005), where the interpretative link between the two parts of the compound can be very different: pill against headache, pill to increase fertility, pill to avoid pregnancy. The type of compound productivity studied here is a characteristic trait of English. So, whereas some of the conceptual metaphors we discuss as framing devices might be used in other European languages, the lexical compounds we study are not.

A compound is a word that contains more than one root, such as "black board" or "right-headed," for example. We focus here on compound nouns that can be verb–noun, noun–noun or adjective–noun compounds, such as "low-carbon economy." In our corpus noun–noun compounds predominate. Most English compounds are right-headed (e.g. "carbon society"—a society that relies on carbon). Compounding is recursive, e.g., "carbon rationing"—"carbon rationing action"—"CRAG," etc. Elements of compounds are related to each other in terms of head-modifier, e.g., "carbon society," where "society" is the head and "carbon" the modifier. In our case "carbon" is mostly used as a modifier. And it should be stressed that it is an elliptical modifier, as it leaves out the word "dioxide," for example, which has to be inferred.

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In our corpus "carbon" is always a non-head in noun–noun phrases that use it. We shall focus in the following on relatively simple compounds and not discuss very complex ones such as "lower-carbon-living knowledge."

Many compounds are metaphorical in nature. The compound "carbon credit" is a metaphor that references the finance frame; the compound "carbon sinner" can reference by way of metaphor either the religious frame or the diet frame, just as the interesting compound "carbon indulgence" does (Nerlich & Koteyko, 2009). These frames can, however, also be indexed by conceptual metaphors that do not use compounding, such as "tread a saintly path" in this example from the press corpus: "CRAGs offer some hope for high-carbon sinners willing to make some of the sacrifices necessary to tread a cleaner, more saintly path." (Kanter, 2007a). When the compounds are contextually embedded in this broader network of metaphors, we hypothesize that they are ideologically more effective, because they seem cognitively more plausible and evoke an emotional response (Charteris-Black, 2004). Further research, especially audience research, would be needed to verify this hypothesis.

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Analysis

As Johnston (1995, p. 229) points out: "The key to micro-frame examination lies in collecting a small set of texts from 'critical junctures' in the life of a social movement for study." The first part of our analysis is therefore focused on the language used by Craggers on their website (which is obviously filtered through the activity of website writing, which includes linking it to other sites, such as government advice websites, and importing some of their language and framing). The website partially reflects the movement's initial ethos and the way it wants to be seen by the outside world.

The second part of the article examines the reporting on CRAGs in the English-speaking press. It is obvious that, as Boykoff has pointed out, "the role of the journalist is not that of a parrot; choices about how to represent various aspects of climate science and policy through the media depend on available information, interpretation and context" (Boykoff, 2008), and the same could be said about the representation of climate change activism. There are also clear differences; climate science is abstract and complex, and therefore, poses inherent problems to media reporters trying to write a good story, whereas climate activism has the advantage of providing a human interest angle and conveying a relatively simple message about carbon reduction. This opens up possibilities of tying the story in with traditional media frames, such as human interest, morality, individual responsibility, and life-style that are more difficult to use in reporting on climate science. We shall see below how finance and lifestyle metaphors were employed to tie reporting on CRAGS in with such standard media frames.

During the initial stage of the analysis, the website and media content was coded for what we have metaphorically called carbon compounds (35 different compounds were found on the website and 40 in the newspaper coverage). Next, heads of the compounds were grouped into semantic sets—for example, "carbon debt" was assigned to the category of *finance*, "carbon living" to the category of *lifestyle*, whereas

"carbon sinner" was assigned to the more general category of *attitudes* (here any words bearing evaluation or moral overtones were included). In addition, we attended to the immediate lexis surrounding the compounds, such as the use of terms like "jet off," "punishment," and "profligacy" discussed below, although, the use of these was not quantified.[1] Apart from enabling the identification of different clusters of compounds, such coding alerted us to the fact that attitudinal compounds such as "carbon binge," for example, were used only twice on the website—in contrast to six uses of similar compounds in the newspapers. This tendency, together with the proliferation of attitudinal lexis used in association with compounds, led us to speculate that a more polemical, emotional and sometimes ironic style was detectable in the newspapers—a hypothesis which will be discussed further below. Let us here just point to the phrase "treading a saintly path" quoted above. Although being a saint is obviously a positive thing, in modern societies, the word "saintly" has assumed a more ironic overtone.

Following Kolker (2004, p. 820), this paper is concerned with the use of both lexical frames and metaphorical frames as cultural (and linguistic) resources and investigates "how social movement actors utilize cultural ideologies in their framing activities to construct persuasive and culturally resonant frames and redefine social conditions" and how these are in turn framed by the press. The following subsections describe the second stage of our analysis as we first study in more detail the clusters of compounds that were used, and then discuss the conceptual metaphors that were activated (due to space limitations only some of the metaphors are discussed).

Website Analysis

CRAGs introduce themselves on their homepage, as a "network of carbon conscious citizens." With "carbon conscious" we already have an example of one compound that was only sporadically used before about 2005.[2] On March 4, 2008, when we captured the website, there were 53,900 attestations on Google™. There were "carbon conscious consumers," "carbon conscious children," "carbon conscious thinking," "carbon conscious shopping," and so on. Carbon consciousness has certainly been rising over the last few years and this has prompted activities such as CRAGs. Craggers believe that:

> (. . .) the impacts of climate change demand a serious programme of greenhouse gas emissions reduction, and we urge governments to adopt a universal and equitable framework to achieve this.
>
> In Crags, we are trying to implement this approach at a community level. We do this by forming local groups to support and encourage one another to reduce our carbon footprints. We share knowledge and skills in lower carbon living and seek to promote awareness and practical action in the wider community. (http://www.carbonrationing.org.uk/wiki/home)

The CRAG homepage has a clear layout providing quick access to other groups and to general guidance on various issues, most importantly: carbon rationing and

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footprinting, which are listed at the bottom of the first page but are also listed on the left-hand side as tags[3]—see Figure 1. Both footprinting and rationing involve monitoring and/or controlling one's carbon consumption in terms of electricity, heating, air transport, car transport, public transport, and food.

This management of carbon consumption is achieved through the calculation of carbon emissions. Although the CRAG website mainly deals with per-capita emissions, there are also tags on broader issues, such as advice on "carbon allowances," "carbon reduction," "carbon offsets," "national rationing," and "global rationing." One of the main aims behind a CRAG meeting is therefore to count or calculate personal carbon emissions of group members. The website advises Craggers-to-be that on their first meeting they should "(a)gree on what you want to count. To keep it simple you might want to just focus on heating, electricity, car and air travel and ignore travel by public transport." During a second meeting members can proceed to discuss how carbon emissions will be recorded and elect the group's "carbon accountant."

CRAGs propose to do voluntarily something that the UK government has been debating since about 2005, namely stick to "personal carbon allowances." In 2005 *The Daily Telegraph* reported on governmental discussions regarding such schemes:

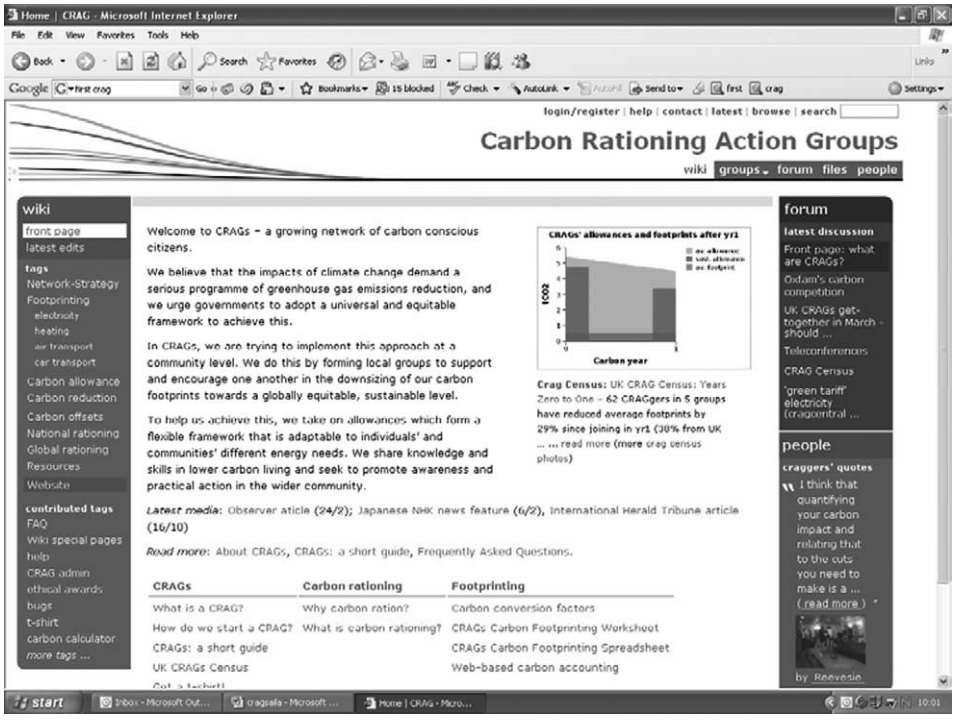

Figure 1. CRAG homepage on March 4, 2008.

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> Every individual in Britain could be issued with a "personal carbon allowance"—a form of energy rationing—within a decade, under proposals being considered seriously by the Government. Ministers say that increasingly clear evidence that climate change is happening more quickly than expected has made it necessary to "think the unthinkable." They believe they need to start a public debate on energy rationing now if Tony Blair's aspiration of cutting greenhouse gas emissions by two thirds by 2050 is to be achieved. Under the scheme for "domestic tradable quotas" (DTQs), or personal carbon allowances, presented to the Treasury this week, everyone—from the Queen to the poorest people living on state benefits—would have the same annual carbon allocation. (Clover, 2005)

The same topic was tackled again in 2006 by David Miliband, then Secretary of State for the Environment, and provoked a reaction by a reader of *The Guardian* who, on December 14, published a letter that, for the first time, mentioned CRAGs in the British press. We will come back to this in the section dealing with the media coverage.

As the name of this social movement in the UK implies, the focus is on the issue of carbon rationing which should lead to the reduction of individual and collective or community-wide carbon footprints. The compounds "carbon emission," "carbon footprint," and "carbon ration" are therefore central lexical nodes around which the rest of the group's activity is spun out in terms of lexical–semantic networks as well as actions.

The compound "carbon emission" is a relatively old one, used widely all over the world and has been used in the media since the 1980s.[4] Craggers use "carbon emissions" as their basic currency that can be exchanged, owed, etc. Unlike monetary currency, however, "carbon emissions" have what one might call a negative value as they have to be reduced rather than accumulated (this is why the media in general tend to describe carbon emissions as "sins" and carbon credits as "indulgences"). Due to its status as the basic calculable unit and perhaps due to its wide use and increasing discursive and cognitive familiarity, "carbon emissions" are implicated in other more recent compounds used by Craggers (see below "carbon year," "carbon account," etc.).

The compound carbon footprint by contrast is more recent in origin. Although listed in the OED as first being used by the BBC in 1999, it has only been used regularly in the UK national press since 2004 (see Figure 2).

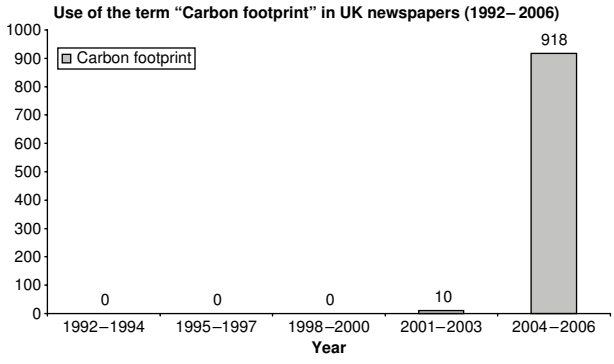

Figure 2. "Carbon footprint" in UK.

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Craggers define a "carbon ration" as an annual emissions target. Most groups set annual targets, although, some set semi-annual ones. This annual target defines what they want to achieve during a "carbon year" in terms of reduction of footprints. Their aim is to reduce personal and, in a way, interpersonal or community wide, but not necessarily societal carbon footprints. A definition of carbon footprint is provided on their website under the heading "footprinting":

> A carbon footprint is a measure of all the carbon (or carbon equivalent) emissions attributable to a person or activity. Because many products generate emissions at each stage of their life-cycle, it is often necessary to account for these in a carbon footprint by conducting a life-cycle analysis (LCA).

CRAGs use "carbon footprint" both in its full form and in a truncated or elliptical form, that is as "footprint," indicating that in the context of climate change the word "footprint" has now developed a new sense, no longer solely meaning "the imprint of a foot on a surface." Instead, after having been used metaphorically in the compound "carbon footprint," "footprint" can now mean "the impact of emission activities on the earth." In this new sense the word "footprint" can now become the head for new compounds, as in "lifestyle footprint," or it can be used as a modifier, as in "global footprint network"; and, finally, it can be used in recursive compounds, as in "easy ecofootprint estimate," and so on.

CRAGs also use "footprint" as a verb, as in (to) "footprint," especially in form of the gerund "footprinting," which can be used as a single word or can itself become part of a novel compound, such as "footprinting system," "footprinting calculations" (and less surprisingly, "footprinting tag," "footprinting wikipages," and so on). The word "footprint" can also be supplemented by adjectives such as typical, personal, society, global, national, and so on. These are some examples of novel compounds around carbon (also abbreviated as CO_2 footprint and footprinting).

The meaning of these various compounds is implicit and has to be inferred from the context—a cognitive activity that by itself entrenches the word used more and more in semantic memory, making it more salient and thus easier to retrieve, use and modify. The spread of a conceptual network around carbon itself through compounding might also contribute to this increase in cognitive salience, frequency of use, and entrenchment. Such cognitive entrenchment in turn may have social and cultural consequences, as people will use such words more readily and hence make climate change a more prominent topic for discussion and debate—at least in some activist circles.

Keeping track of one's carbon footprint is absolutely essential for the groups. This footprint is measured in terms of carbon emissions per head per year, what they call the "carbon year." This compound is quite novel and, although, perhaps not invented by CRAGs, is absolutely central to the groups' ideology, as the whole carbon rationing action plan revolves around it—they are after all CRAGs. As we have seen, "carbon rations" are annual emissions targets that are set by the group. At the end of each "carbon year" members of the group take responsibility for their "carbon debt," that is emissions that exceed their "rations." This debt is paid into the group's "carbon

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fund" at an agreed rate per kilo of "carbon debt" and the fund is then distributed according to what the group agrees to do with it, e.g., to give to a chosen charity, etc. There are therefore "financial rewards and penalties" that make you think about your carbon emissions.

The compound "carbon ration" is of course also central to what CRAGs do. It can be used as a noun as in "a carbon ration" or a verb, "to carbon ration." This then leads to constructions such as "a quick checklist to get you up and carbon rationing" and "if you have followed these nine steps you are already carbon rationing," "why carbon ration?" and so on. There are also "carbon rationers" and there is a further compound: "a carbon rationing society." Generally, carbon rationing is conceptualized as a journey or pathway to a fairer, lower carbon future, low-carbon living and a low-carbon society.

Rationing as a frame for dealing with carbon emissions resonates with a well-entrenched cultural frame in the UK, namely rationing during and after the Second World War. This frame of reference does not resonate so well with cultural experiences in the USA, where CRAGs are called "carbon reduction action groups." In terms of using culturally resonant frames, the financial frame dominates. As we shall see, this is a bit different in the media coverage where other types of metaphorical frames are also used, such as the dieting frame.

A more moralistic overtone is used on the website (but only rarely), when we read about metaphorical "carbon binges," paying one's "carbon dues," and being hit by a "carbon penalty" (which also resonates with the football frame). Here the "consumption" of carbon is framed either as bad eating or drinking behavior or as bad behavior in general that is penalized. Carbon is here conceptualized as food, drink, or alcohol that should not be consumed to excess. With reference to alcohol, people are generally exhorted to stick within their daily "allowance" and with respect to carbon, CRAGs set themselves certain "carbon allowances." In the UK especially, binge drinking has become one of the many types of problem behavior observed and criticized in young people and middle-class women. This more moral discourse is also revealed when group members are asked whether they have "already pledged to reduce" their carbon footprint. A pledge is a solemn binding promise to do, give, or refrain from doing something (a frame that came to prominence in the USA during the temperance movement, is widely used in slimming programs and can therefore be linked to the diet frame). More emotive terms that we found in the press coverage, such as "carbon sinner," for example, were, however, conspicuously absent from the language used by the activist.

Overall, the language on the CRAG website seems to avoid over-emotional or threatening language. It appears that those who write for the website try to use relatively neutral issue frames or collective action frames and avoid more emotional or affectively loaded news frames. They also try to avoid the use of conceptual metaphors as major framing devices. Some of the compounds though are metaphorical in nature: e.g., the compound "carbon binges" conveys an emotional message (feel bad and guilty if you don't reduce carbon emissions) over and above the cognitive one (reduce carbon emissions). Various "carbon accounting tools" are offered on the website,

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including one tool called The Carbon Diet (www.carbondiet.org), which explicitly maps the dieting frame onto the carbon calculating frame (a frame that, in this case, is imported into the CRAG website from another website).

Analysis of Press Coverage

CRAGs first came to our attention when reading an article by Tim Webb for *The Observer* on February 24, 2008, entitled "Want to cut your carbon? Join our club." The subtitle reads as follows: "Social networks where *guilty greens* admit to *carbon crimes* and are *punished* for *profligacy* spread through UK" (italics added). This subtitle alone contains more moralistic language and conceptualizations than the entire output on the CRAG homepage.

In order to examine the media coverage of this new social movement, we carried out a search on March 1, 2008, using the search term "CRAG" in the English-speaking press accessible through the Lexis Nexis Academic data base. This gave us a corpus of 18 items, 11 of which were newspaper articles, and seven which were other news sources, such as magazines and aggregate news sources. To this we added the above *Observer* article, which at that point, did not show up on Lexis Nexis.[5]

As in the case of the website, "carbon emissions," "carbon offsetting," and "carbon footprint" were frequently used. They were also creatively expanded to form other compounds such as "carbon footprint calculator," "carbon-offsetting organisation," and "carbon-offset providers." The framing of carbon mitigation activities with the help of finance metaphors was as important in this corpus as in the previous corpus. There was talk of "carbon taxes," "carbon funds," "carbon debts," "carbon budgets," "carbon credits," "carbon saving," and even "carbon-credit speculation" and "carbon credit cards." There was also talk of "cooking the carbon books," which, like the speculation frame, hints at fraudulent activities by big corporations or individuals, that is, the deliberate distortion of a firm's financial accounts, often with the aim of avoiding the payment of tax.

A new cluster of metaphorical compounds emerged, however, around the topic of a "low-carbon" lifestyle that was opposed to high-carbon "indulgence" (a topic that had also been discussed on the CRAG website). We found compounds such as "low-carbon lives," "low-carbon living," "low-carbon lifestyles," "carbon-profligate lifestyle," "low-carbon city," "low-carbon high street," "low-carbon habits," "carbon neutral (pub quiz) round," "green lifestyle advisers," and even "carbon coaches." This indicates that living a low-carbon life is not just the preserve of activists but, at least in the press, also an activity that those who might not see themselves as activists are buying into.

One compounding strategy, namely using the compound "low-carbon" as the modifier and other nouns as head, was frequently exploited, in fact much more so than in the website corpus. It seems to have become an entrenched mode of "eco-speak" (Killingsworth & Palmer, 1992) preferred by newspapers and policy makers, which is only partially shared by the activists on the ground.

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Pilot work carried out in the summer of 2007, during which we scanned all major newspapers in the UK in relation to carbon offsetting and trading schemes, identified three major discursive clusters that were emerging around carbon compounds in the UK: a *moral and religious* (or *attitudinal*) cluster (e.g., "carbon sinner," "carbon guilt," "carbon criminal," etc.); a *dietary* cluster ("low-carbon diet," "carbon calories," "carbon calorie counter," etc.); and a *financial* cluster ("carbon trading," "carbon finance," "carbon market," etc.) (see also Ereaut & Segnit, 2006, who studied these discourses as climate change repertoires). It became apparent that discourses on adapting to or mitigating climate change recruited other, well-established discourses used to frame advice on bodily, spiritual or financial matters, in order to argue about the pros and cons of certain climate change actions, to stimulate action, or to protest about inaction. The clusters we have identified in the two corpora under discussion confirm this initial analysis.

When we studied the Lexis Nexis corpus reporting on CRAGs, we found again that the *financial, attitudinal,* and *dietary* frames were present and unlike in the first corpus, they were also exploited via the use of three related conceptual metaphors. These conceptual metaphors were: *climate activism is financial management; climate change activism is a moral, ethical, or religious imperative;* and *climate activism is dieting* (where the carbon footprint is the equivalent to the human body). Some less prominent frames were: *climate activism is a battle/challenge/war* and *climate activism is a journey* with the reduction of carbon emissions being the goal.

The financial framing of carbon reduction activities is perhaps the oldest, most well documented, most official, and therefore, dominant frame. It is rooted in the complicated mechanism of carbon trading instituted by the Kyoto protocol and subsequent regulations. Representative examples of passages using the financial frame in our sample are: "... at the end of the year if they've gone over their agreed 'ration,' they pay their debt into the group's carbon fund at an agreed rate per kilo of CO_2" (Pearson, 2007); "The group holds its members to account by imposing fines on those who fail to keep their emissions under the yearly limit" (*The New York Times*, 2007, October 21); "... espouses letting members roll over the credits they accumulate during a low-carbon year to allow for occasional high-carbon indulgences" (*The New York Times*, 2007, October 21); "Those with low-carbon lifestyles could sell their unused credits, while individuals with bigger carbon footprints could purchase additional credits" (Bird, 2007); and "We [says Andy Ross] carry bank cards that store both pounds and carbon points. When we buy electricity, gas and fuel, we use our carbon points, as well as pounds ..." (People power cuts carbon, 2007); and so on.

The moral discourse, framed by the conceptual metaphor *climate change activism is a moral, ethical, or religious imperative*, seems to be favored in some headlines for the newspaper articles, such as: "Carbon reduction the new resolution" ("We must act now", 2008), "Heroes welcome" (Pearson, 2007); "Neighbors agree: Thou shalt not emit" (Kanter, 2007b). It was even more prominent in the subtitle to the *Observer* article from which we quoted above, which talks about "guilty greens," "carbon crimes," punishment, and "profligacy." The article describes CRAGs as:

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> Community groups that meet in one another's homes and local pubs and set themselves personal carbon targets for the year. Backsliding members who jet off on too many foreign holidays have to pay their colleagues a nominal fine or do green-style "community service" to make up for their environmental transgressions. (Webb, 2008)

Words like "backsliding," "jet off," "community service," and "transgressions" continue to frame carbon rationing in moralistic and judgmental terms. However, real Craggers insist that cragging is meant to be fun and that they don't set out to humiliate, criminalize, or blame each other. In this way, the media framing is inconsistent with the framing ambitions exhibited by the groups on which the media report. Examples of moral and religious framing are: "I am not an angel [says Alison Ambrose] about it, I do it when I remember" (Jowitt, 2007) (indirectly arguing against the "saintly" label discussed above); "gift certificate for our conscience" (Bird, 2007); "evangelical recyclers" ("If China's busy building", 2007); "An admission of guilt can be a driving force for change, and the truth is that it feels good to be part of the solution [says John Crossham]" ("If China's busy building", 2007), and so on. As with "saintly path" quoted above, "evangelical recyclers" carries ironic overtones, which is rejected by the activist interviewed.

The dieting discourse, framed by the conceptual metaphor *climate activism is dieting*, and the financial discourse, framed by the conceptual metaphor *climate activism is financial management*, structure more of the newspaper texts, despite only appearing sporadically in the headlines. However, it should be stressed that moral/religious, financial, and dieting discourses may overlap as people have to pay for their carbon sins or make up for over-indulgence or what was called a "carbon binge" on the Craggers' website. In the dieting discourse, cultural references to Weight Watchers, an organization whose members join to lose weight through structured eating and exercise, are of prime importance. It has resonance with experiences about dieting both in the UK and the USA and ties in with life-style advice given in newspapers by various experts and is also discussed with relation to media celebrities. Examples are: "Rather like Weight Watchers for the carbon-heavy" ("Credit is not the answer", 2006); "a sort of cross between Alcoholics Anonymous and a dieting club" (Pearson, 2007); "Forget the low-carb diet, try the low-carbon one" (Trend watch: Craggers, 2007). Here the focus in more on integrating carbon rationing into the life-style of the affluent, rather than on activism or environmentalism.

Carbon compounds and metaphors are used by activists and the media not only to talk about climate change, but also to bring about behavior change. A first step toward such a change is always to make people think differently about a topic, to change old cognitive habits, and entrench new cognitive habits—to see things in a new light, in fact to create new ontologies. However, new thinking has to be rooted in something already well-known and familiar to make the jump from old to new possible. This is why metaphorical frames such as dieting, finance and tax paying, war time rationing (which evokes heroic actions), and religious imperatives (which can guide "ethical" behavior) are so important, especially in press coverage where messages that are clear and familiar to insiders/activists have to be made familiar to outsiders/potential activists.

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Conclusions

In this article we set out to contribute to the field of ecolinguistics by examining a special type of lexical creativity, compounding, in the domain of environmental activism, using a new movement, namely CRAGs, as a case study. This extends the traditional scope of ecolinguistics while linking to existing research into metaphors and frames.

We examined the lexical creativity that went into framing carbon rationing through compounding on the CRAG website. We then went on to study the representation of CRAGs in the media and found that the English-speaking press use very similar clusters of compounds but, in addition, rely more heavily on three conceptual metaphors to frame their representation of the actions and ideology of the group and tie it to three overarching conceptual metaphors and frames which are already familiar to newspaper readers interested in climate change. These conceptual metaphors of finance, religion, and diet frame what CRAGs are doing in relatively moralistic terms, whereas the use of compounds on the CRAG website remains relatively neutral. There is then quite a striking difference between news frames and issue frames and between news frames and collective action frames in terms of the lexical creativity involved. Issue frames and collective action frames create a new language of climate change activism but avoid overly moralistic language, whereas news frames rely on well-established and resonant conceptual metaphors of religion, dieting, and finance to bring this activism to the attention of the general reader. Both languages, that of activists and that of the press, overlap in the use of the financial frame to create a new awareness of and new actions regarding climate change mitigation activities.

Based on the cultural turn in social movement scholarship (Johnston & Klandermans, 1995; McAdam, 1994; Swidler, 1986; Williams, 1995), this paper has investigated how one group of environmental activists uses lexical creativity to persuade audiences to change their carbon emissions behavior and to shift perceptions of climate change from being a global environmental problem tackled by governments to an individual/community concern. It also analyzed the representation of this activism and its language in the press. By examining in detail the linguistic creativity involved in this dual framing, the paper offered an ecolinguistic turn to this cultural turn. As a problem-centered discipline, applied linguistics deals with the theoretical and empirical investigation of real world problems in which language is a central issue and enables the study of multiple discursive constructions of the present ecological crisis.

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Notes

[1] The difficulty lies in establishing clear criteria for inclusion as proximity of such lexis to the compounds varies given that the evaluative item can be used in the same sentence or two paragraphs down the text.

[2] A search of the Lexis Nexis database of newspapers reveals that the phrase "carbon conscious" was first used in 1992 and after that only very rarely until the use exploded in 2005.

[3] We have tried to follow all the links in order to establish our corpus, but we have excluded the link that leads to the CRAGs forum, as this would need a separate analysis. We have concentrated instead on following links at the bottom of the page regarding, CRAGs, rationing, and footprinting.

[4] As the phrase is too frequent, it was impossible to check its first use in English-speaking newspapers overall. It was, it seems, first used in *The Guardian* in 1988.

[5] Lexis Nexis does not give information about URLs or page numbers. Quotes from press sources will be followed by a reference to author, if available, and date of publication. In the list of references readers can also find information about the title of the article or other item, as well as its source.

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