

# The Commodification of Cancer: A Multimodal Discourse Analysis of Cancer Websites in China

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## Abstract

With the liberalization of market access, things such as health and healthcare that were once not for trading now have attained an exchange value. The technological advancement may continue facilitating such commercialization and commodification. Against the socioeconomic backdrop, this study investigates how the cause of preventing and fighting cancer is commodified by cancer websites in China. Adopting the multimodal discourse analysis approach (Kress & van Leeuwen, 2001), this study identifies five strategies that cancer websites adopt in the commodification process of cancer prevention/management: 1) oversimplifying cancer prevention; 2) representing advertising discourse; 3) facilitating the use of cancer websites and their official account on social media; 4) marginalizing the discourse of cancer-related scientific knowledge; and 5) creating a sense of solidarity. The present study suggests that the commodification of cancer is to some degree problematic. This is because it emphasizes too much on personal efforts, particularly relying on the consumption of certain things, and it detracts from the importance of the socio-political responsibility for the welfare of the public.

## Keywords

Cancer Website, Commodification, Multimodal Discourse Analysis, Discursive Strategy, China

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## 1. Introduction

The Internet has become the most commonly used source of cancer information (Mayer, 2006; National Cancer Institute, 2010), due to its accessibility and ease of use (Castleton et al., 2011). Web-based health information plays the same important role as doctors for people seeking health information (Blanch-Hartigan & Viswanath, 2015) and it tends to influence people's decision making on main-

taining healthy lifestyles (Koteyko, 2009). Given the importance of web-based information, previous studies examined cancer-related websites in terms of website information or quality improvement and its usefulness (see Clayman et al., 2008; Snyder et al., 2013; Warren et al., 2014), website design tenets and the application of theoretical components (see Ivory & Megraw, 2005; Pendergrass et al., 2001; Turchin & Lehman, 2000; Whitten et al., 2008; Zhang & von Dran, 2000), websites' intervening role on patient-doctor relationships (see Haase et al., 2016; Hou & Shim, 2010; Lewis et al., 2009; McMullan, 2006; Rider et al., 2014), and the effects of multimodality on users' perception and communicative behaviour (see Bol et al., 2013; Nguyen et al., 2017; Spiegelhalter et al., 2011; Stellamanns et al., 2017).

Few studies, however, have examined the multimodal discourse construction of cancer websites (see Gibson et al., 2015; Gibson et al., 2016), particularly of related commercial websites which are characterized with multimodal design (Martinec & van Leeuwen 2009). Gibson et al. (2015, 2016) identified the multimodal discursive strategies in constructing a "live well with breast cancer" message and in representing women from various backgrounds on breast cancer websites that are run by national organisations and at the state level in Australia. Their study provides the insights that meaning is multimodal and that the commodification of health can be reinforced through the construction of the multimodal discourse on cancer-related websites. While related studies have been conducted in western contexts, web-mediated cancer promotion in non-western contexts is under-researched, especially in the context of China.

In China, cancer is a major health problem (Chen et al., 2016). It has been the leading cause of death since 2010 (Chen et al., 2016) and about 27% of global cancer deaths occurred in China (Ferlay et al., 2013). The number of new cancer cases and deaths for all cancers in China has been increasing from 2002 to 2011 and there is still an increasing trend of cancer incidence (Chen et al., 2016). In dealing with their health, more and more Chinese people use the Internet for health and medical information seeking. The number of "netizens" who have ever used the Internet for medical purposes was more than 0.6 billion, accounting for about 70% of the Internet users (BCG & TMI, 2020). Cancer-related websites probably have an increasingly crucial role to play among Chinese people who seek cancer-related information online. Catering to the public's need of being equipped with cancer-related knowledge, some cancer-related websites have been established in China (see <http://www.globecancer.com/>). However, studies investigating the communicative aspect of these websites are very scarce, not to mention the exploration of the multimodal discourse construction on those cancer websites.

The importance of studying cancer websites in the China-specific context may lie in the contribution to discovering new sites and mechanisms of communicative practice. This is because a fair understanding of discursive practices in specific contexts is viewed as a prerequisite for improving communication in

health-related settings (Wilce, 2009). While the globally hegemonic ideology of “communicability” (Briggs, 2005) has privileged the “white” site discourse, “non-white” discourses are needed for exploring the commonality and variation in health promotion discourse. Such discourses are also beneficial to investigating the interactions between global circulation of ideologies and local traditions that consist of certain relations (Wilce, 2009). Thus, to have a better understanding of the communicative value of the cancer websites in a non-western context, this paper examines the multimodal discourse on cancer websites in China by the approach of multimodal discourse analysis. In particular, it aims to identify how the commodification process of cancer prevention and management is carried out through the design of different semiotic modes.

## **2. Data and Methods**

### **2.1. Analytical Framework**

This study adopts Kress and van Leeuwen’s (2001) multimodal theory to examine discourse, design, production and distribution, to understand communication via cancer websites. Discourse is viewed as social practice which is realized by design(s) in a communication situation or context. It is socially constructed knowledge which is produced or developed in specific social contexts and for distribution among social actors in the contexts. Designs are the uses of semiotic resources which involve the selection of resources and the semiotic modes, such as language and images. Production is the actual articulation of the semiotic event or artefact (e.g., a website homepage). Distribution, or according to Koteyko and Nerlich’s (2007) understanding, consumption, refers to “the technical “re-cording” of semiotic products and events, for purposes of recording and/or distribution” (Kress & van Leeuwen 2001: p. 21). As Kress and van Leeuwen (2001) state, in the digital context, production and distribution are technically integrated. For example, as soon as an image is produced or posted online, it is distributed to web-users. Thus, in this study, the fourth domain, distribution, is not particularly addressed. In addition, in Kress and van Leeuwen’s view on multimodal discourse, meaning is being made in those four domains (i.e., discourse, design, production and distribution). The same meaning in a particular context tends to be presented in different semiotic modes (see Gibson et al., 2016). Following their multimodal theory, I propose two analytical categories for examining cancer website homepages: 1) the meaning that is conveyed through the multimodal discourse design, and 2) the way that different semiotic modes are combined to carry out this meaning.

### **2.2. Cancer Websites**

This study first identified 17 cancer-related websites launched in China through Baidu: the largest and most popular search engine in China, using the keywords: cancer and tumour in simple Chinese characters. Then, four websites were selected for analysis (see Appendix I). The website selection criteria were: 1) con-

taining comprehensive information about cancer and 2) being rich in images (see Moran & Lee, 2013). Besides, considering the popularity or usability of a website, websites that do not have any ranking information on Alexa.cn were excluded. 1 Those four websites are all commercial ones and deal with all cancers. Only the homepage of each website was analyzed in this study. This is because there are numerous links on a website which lead to different webpages. Besides, a website's value as a "portal" to other useful webpages is viewed as significantly relying on the perceived value of the homepage (Weinberg, 2000). More specifically, all images, text, colour, and layout on the homepage of each selected website were considered in the analysis. The homepages are publicly available for viewing (i.e., they are open access, rather than being password-protected). This means that conducting research with their content does not require informed consent from the contributors (Demjén, 2016; Seale et al., 2010).

Screenshots of each website homepage were taken and the non-static images on each homepage were archived separately in 2020. These screenshots were archived in PDF format and labelled by number as well as the name of related websites. The author did a closing reading on each screenshot and made descriptive notes with reference to the use of images, text, colour, and layout (Gibson et al., 2015). Then, an initial thematic overview was summarized. After the initial coding, the research data were analyzed by the two analytical categories mentioned above. In this way, results were generated, which are presented in the following section.

### 3. Findings

The present study identifies the phenomenon of commodification of cancer prevention and management, a message conveyed through the multimodal design of the homepages of selected cancer websites. Commodification can be understood as "the production or conversion of ideas, knowledge, and objects into items that are considered useful and/or have exchange value" (Lock & Nguyen, 2010: p. 206). Commodification of health is viewed as a process that addresses health concerns which are taken advantage of by marketing strategies (Nichter, 1989). The phenomenon of commodification of health, medicine or healthcare has been explored before (see Henderson & Petersen 2002; Nichter, 1989; Tonkens et al., 2013). This study shows that the commodification process is also seen in the online provision of cancer information. This finding is in line with that of previous studies (see Elliott, 2007; Zavestoski et al., 2004), which present the "ongoing circulation" of the commodification of a specific cancer in daily surroundings, especially breast cancer (Ehlers & Krupar, 2012: p. 8). It is noted that breast cancer is commodified by pharmaceutical companies through constructing breasts as problems that are "detached from females and their marginalization within the social structure" (Zavestoski et al., 2004: p. 581). Besides, the awareness of breast cancer is also commodified through cause-related marketization and the promotion of the pink color (Elliott, 2007). While prior studies

highlight the breast cancer-related commodification, this study points out the extension of the application of commodification to cancer in general.

Nitche (1989: p. 236) defined health commodification as the “tendency to treat health as a state which one can obtain through the consumption of commodities”. Following this definition, the notion of commodifying cancer in this study is referred to as the tendency to treat cancer prevention and/or management as an ideal which can be obtained through the consumption of certain commodities that are advertised or promoted on cancer websites. As Hanson (1999) suggests commodification “is a matter of degree and context” (p. 269), this paper does not intend to argue that cancer prevention/management as a whole is commodified in Chinese society; instead, it only suggests that the examined cancer websites create a sense of commodification of cancer. This commodification is realized by multimodal discursive strategies, which are discussed below.

### 3.1. Oversimplifying Cancer-Prevention/Management

Two types of health promotion discourse are displayed on the website homepages: cancer-related and non-cancer-related. The former involves information on diet/food, exercises and lifestyles. Information in relation to diet and food constitutes the main content of cancer-related health promotion discourse. The health promotion discourse presents that (not) eating certain food or (not) having a type of diet can help prevent cancers or a specific cancer. The rationale for displaying this kind of discourse is that the food or diet recommended to prevent cancer or cancer recurrence has particular nutrients that can improve immunity. However, the scientific evidence of the correlation between the prevention of cancer and eating particular food is not actually presented, and the recommended food can be literally good for people to prevent any disease. The message given to the viewers by such health promotion discourse in general oversimplifies the cancer prevention cause.

While food/diet is promoted in relation to cancer prevention, it is noteworthy that some food promotion discourse is not related to cancer prevention/management. The non-cancer related discourse, however, is positioned within the “frame” in which there is cancer-related discourse. In this way, it may create a false association between cancer prevention/management and the benefit of eating certain food (see **Figure 1**).

In **Figure 1**, the heading says “oesophagael cancer” and below this heading there is a food image. Below the food image it says “Eat more yellow food to improve internal incretion”. Although this statement is not related to the heading, the image is likely to be associated with the heading by viewers. This is because, as discussed earlier in this section, the website homepages convey a message: healthy eating can help prevent cancer. This message may implicate the viewers that the food in the image of **Figure 1** is also one of the healthy foods for cancer prevention. In addition, the heading “oesophagael cancer” is a text link which



**Figure 1.** Oversimplifying cancer management.

leads to a webpage that talks about oesophagael cancer, but this link is not highlighted in some way to indicate that it is clickable. However, the text link below the food image (i.e., “Eat more yellow food to improve internal incretion”) is highlighted by an underline when the mouse pointer points to it, so it may be more likely to be clicked by viewers. The food image itself is also a link. Both the image link and the text link below the image lead to the same webpage, on which the content does not mention anything related to oesophagael cancer. If viewers do not click the link to read the content, they may not find out that the statement “Eat more yellow food to improve internal incretion” has nothing to do with oesophagael cancer. It may result in a potential risk of misleading viewers into associating this statement with the prevention of oesophagael cancer. That is, viewers are likely to believe that eating more yellow food can help improve internal incretion and consequently prevent oesophagael cancer. Thus, the design of **Figure 1** may create a false idea about the relationship between healthy eating and cancer prevention, which in turn also oversimplifies the cause of cancer prevention through giving much importance to the benefit of eating certain food.

In general, the health promotion discourse in these cancer websites mainly focuses on promoting healthy eating. While such promotion may to some degree oversimplify cancer prevention efforts, it may also perform the function of instructing viewers that they are able to prevent cancer on their own by having a healthy diet. It implies that the cancer websites convey a message to their viewers that the efforts of having a healthy diet can play a key role in cancer prevention. In this way, those cancer websites imply that people who want to keep away from getting cancer are expected to take some actions to achieve this goal. Such an implication highlights the importance of self-care, which may be linked to the advertising discourse that is discussed in the following section. That is, the constructed importance of personal efforts may motivate viewers to look for and re-

ly on more resources that are marketized on cancer websites, so as to achieve the goal of avoiding getting cancer. It may in turn provide opportunities for cancer websites to represent related advertisements that may be of interest to their viewers. This is illustrated in the next section.

### 3.2. Representing Commercial Advertisement

This study finds that homepages of the cancer websites represent advertisements of health products, genetic tests, and herbs that are used in traditional Chinese medicines. Those advertising discourses may provide viewers a sense of control and diverse choices which may “perpetuate consumerist ideals” (Gibson et al., 2015: p. 282), thus facilitating the commodification of cancer prevention/management.

In **Figure 2**, the health product Brolico is being advertised. This advertising discourse is made up of different semiotic modes, such as colours, languages, images, and layout. Those modes construct Brolico as a product that is good to health. On the left of the image, behind the health product is broccoli which may be the main component of the health product. The vegetable broccoli is likely to be associated with the name of the product, Brolico, whose spelling is similar to that of the word “broccoli”. Just as Nichter (1989: p. 239) states that “medicines are associated with metamedical values through key symbols and images evoking networks of semantic meaning”, the name of the health product (i.e., Brolico) may intend to communicate the meaning that the health product is as healthy and natural as the vegetable broccoli. This meaning is foregrounded by the words, “Anti-cancer food”, that are positioned in brackets next to the product’s name in the middle of **Figure 2** [i.e., “Brolico (anti-cancer food)”]. The association between broccoli and Brolico is also highlighted by the green colour used in this image, considering the colour of broccoli is also green. Below “Brolico (anti-cancer food)”, there is a statement with the green-color underpainting which says “A natural product for enhancing human immunocompetence”. In this definition of the health product, the words “natural product” is highlighted by the bold black typeface, while other words in this statement are in white color.

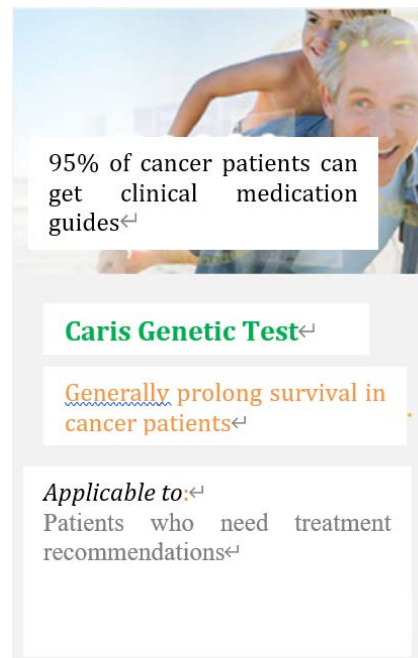


**Figure 2.** The advertisement of a health product.

This emphasis may also associate the health product with the vegetable broccoli, as broccoli is also made of natural ingredients. Below the definition statement, the function of the product is presented, “Immunity enhancement/an adjuvant for anti-tumor treatment”. Those words are in italics and the font color is orange. The information before the forward slash repeats the information that has been given in the definition statement (i.e., strengthen immune system), and the information after the slash links to the cancer-related aspect of the health product. Below this function description, the instruction shows to whom the health product is applicable, “Applicable to patients who have got an operation, and have been exposing to chemoradiotherapy and experiencing targeted therapy”. This instruction information is displayed in a small font and within a grey frame. It seems to be separate from other content in the image, because the design of this instruction communicates the meaning that the targeted consumers of the health product are cancer patients, which is not in line with the meaning that is conveyed by other parts of the image. Based on the design of other content of the image, the product is constructed as a “food” and a “natural product” which seems to be applicable to all people, not exclusive to cancer patients. This design may indicate that the health product can be one of the choices for viewers to eat healthily, since it is advertised as a “food” and “natural product”. Besides, the pills on the bottom left corner of **Figure 2** may imply that it is more convenient to take the pills than eating broccoli since the unprocessed broccoli needs to be cooked before eating. It thus provides another reason why viewers should consume this health product in the cause of living healthily. Drawing from the design of **Figure 2** as a whole, the health product is constructed as being safe to its users. The sense of safety may be the key message this cancer-related advertisement discourse imparts. It can be said that the advertising discourse is designed to show that cancer prevention/management can be achieved through the consumption of the product. Hence, it commodifies the cause of the cancer prevention/management.

**Figure 3** shows an advertisement of the genetic testing technology that is developed by Caris Life Sciences company which is headquartered in the US. The genetic testing technology advertisement foregrounds an image in which there are presumably a father and a son who are smiling and looking in the same direction. Their gazes do not directly address the audience or the viewers. These are fixed upon the future (see Kress & van Leeuwen, 1996), which may indicate hope. The gaze may perform the function of encouraging viewers to look toward the same direction the father and the son are looking toward (see Kress & van Leeuwen, 1996). It links to a statement “95% of cancer patients can get clinical medication guides” which is in bold blue typeface and within the father-son image frame. Below the image is another statement which is in bold green typeface, saying “Caris genetic test”. The “Caris genetic test” statement is positioned in the centre of **Figure 3**, which may imply the importance of this information. This statement is given an important position, because it indicates the ownership



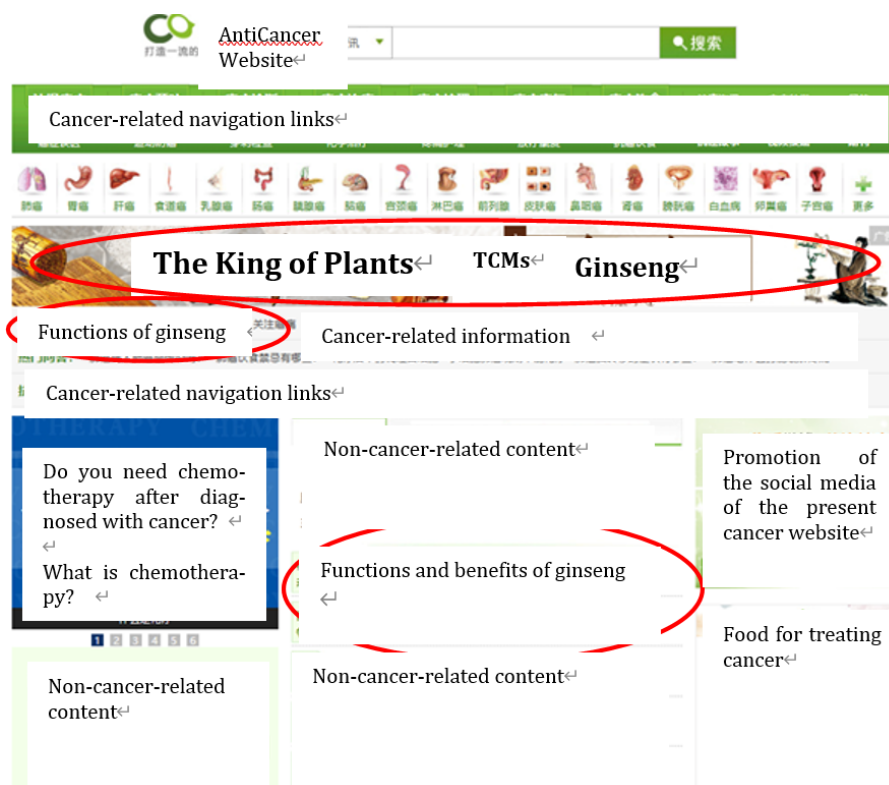


**Figure 3.** The advertisement of genetic testing.

of the genetic testing technology and probably highlights that it is owing to the Caris genetic testing technology that “95% of cancer patients can get clinical medication guides”. Below “Caris genetic test” is stated the benefit of the medication guides: “Generally prolong survival in cancer patients” which is in orange color). The benefit of doing genetic testing can be associated with the happiness of the father and the son, because this happiness image may imply that they are satisfied with or happy about the genetic testing, or they are the beneficiaries of the genetic testing technology. In a word, those different modes together construct a helpful role of Caris genetic testing service in dealing with cancer. Thus, it conveys a message to their viewers that cancer survivorship or management can be handled by having a genetic test.

This study finds that an herb, ginseng, is heavily advertised on one of the cancer websites, both verbally and visually. The advertisement is in the form of text links and an image link (see **Figure 4**).

In **Figure 4**, the content that is marked by red circles represents the discourse that advertising the herb, ginseng. The image link and the two text-links close to the image link can lead to the same webpage, on which the nature, species and function of ginseng, and the ways to eat it are introduced. Interestingly, on this webpage while it says ginseng is not suitable for cancer patients or patients with tumour, it also says one of the components can be used to prevent cancer. In this way, ginseng is constructed as an herb that is useful for preventing cancer but not for coping with cancer. Each of the text links marked by red circles in the main content section of **Figure 4** leads to a different webpage. The webpages mainly focus on advertising a health product, the main component of which is ginseng, and these do not mention anything in relation to cancer. Taken together



**Figure 4.** The advertisement of an herb.

the advertising discourse, ginseng is represented as a commodity which can be consumed to prevent cancer.

The advertising discourse capitalizes on the value of traditional Chinese medicines to promote ginseng. That is, ginseng is highlighted as a valuable herb being used in traditional Chinese medicines. In the circled image of **Figure 4**, there are many elements in relation to ancient China, including the bamboo book on the left side of this image, the Chinese calligraphy type of writing that is on the middle of this image [i.e., from left to right: “The King of Plants”, “TCMs” (Traditional Chinese medicines) and “Ginseng”, and one of the ancients holding a bamboo book on the right side. This image indexes to the traditional culture of China which is made use of by the marketing strategy. The represented cultural value may shape the succession of health commodities that are processed to meet the market economy (Nichter, 1989). In this way, the advertising ginseng discourse reinforces the consumption value of ginseng in terms of preventing cancer.

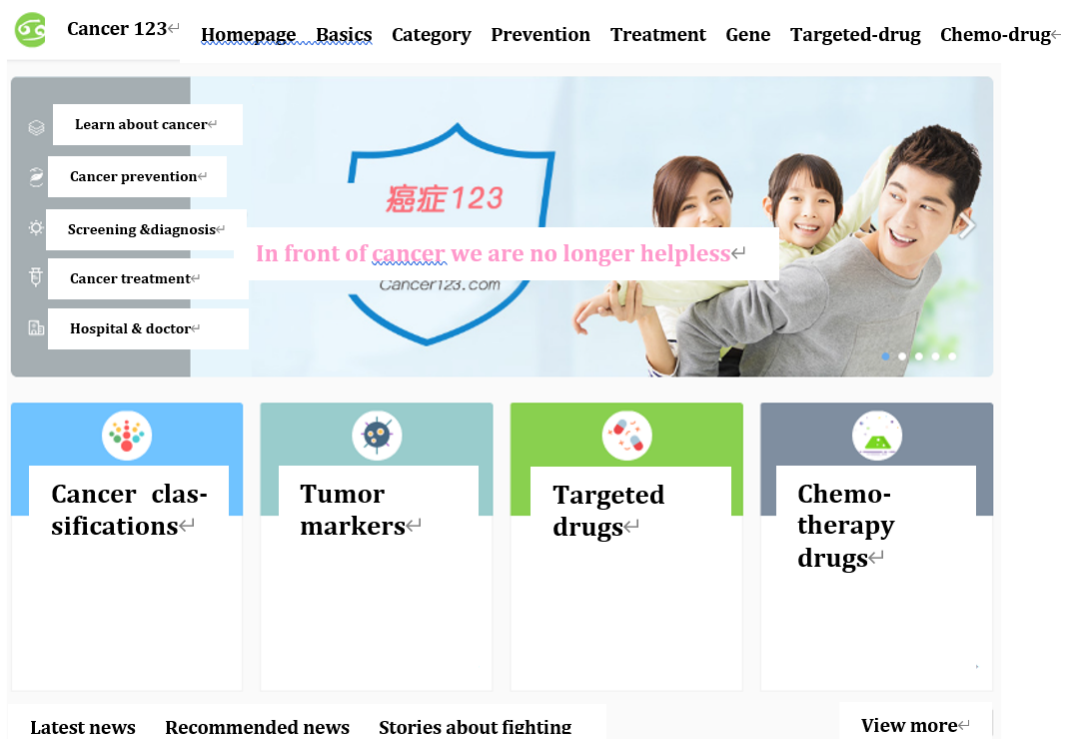
### 3.3. Promoting Cancer Websites and their Account on Social Media

The selected cancer websites advertise their platforms through different semiotic modes, which are positioned conspicuously on the homepage (see **Figure 5** and **Figure 7**). These websites also advertise their official account on widely used social networking sites in China such as WeChat (i.e., a Chinese multi-purpose messaging, social media and mobile payment app) and Weibo (i.e., a Chinese

microblog) (see **Figure 6**).

In **Figure 5**, on the right of the navigation section presents an image advertising the website. In this image, the website's name, its URL and a slogan are framed within a shield-like blue line. The design of the shield-like line may serve the function of indicating that the website can protect the users from cancer. Within the shield-like frame, the slogan says "In front of cancer we are no longer helpless". The use of "we" here may create a sense of solidarity which is discussed in detail in the following section. This inclusive pronoun may also build a sense of intimacy, which can link to the people image next to the shield-like blue line image. The people in this image are presumably a family, including a mother, a father and their daughter. This family image may not detract from the focus on advertising the website. This is because the gaze of the father is fixed on the left side of the image where there is the website's name and slogan, and it may guide viewers to look toward the same direction (Kress & van Leeuwen 1996). The promotion of the website may implicate that the cancer website has an important role to play in the cause of preventing/fighting cancer. Hence, it may facilitate the use of the website. Such promotion thus reinforces the commodification of cancer through highlighting the importance of using the cancer website to deal with cancer.

In **Figure 6**, the cancer website's official account of WeChat and Weibo are promoted. This advertisement informs the viewers that the cancer website's "service" is extended to social networking sites, on which viewers can participate in social networking activities with other users by such as contributing to the



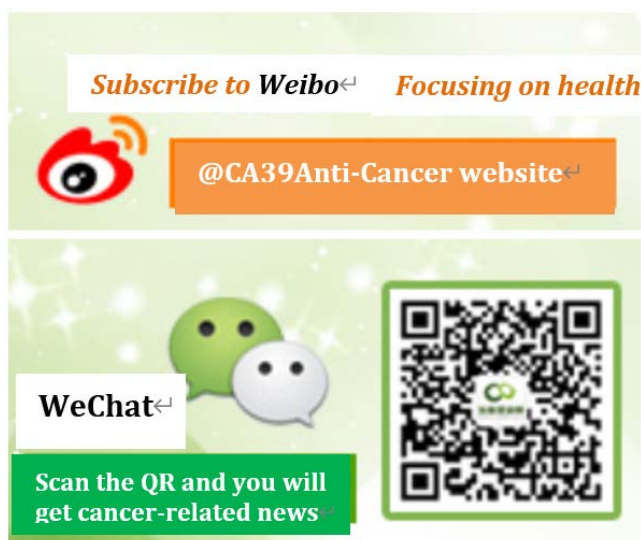
**Figure 5.** Promotion of a cancer website.

commenting area or group chatting. The design of this advertisement is action-oriented. That is, at the bottom right corner of **Figure 6** there is a QR code which has the affordance of scanning. This QR code may facilitate the scanning action of the viewers, in turn increasing the usage of the mobile app-based business of the website. This promotion may forward the commodification of cancer prevention/management, considering that social networking sites are able to facilitate social interaction of health consumers and consequently contribute to the increasement of trust and intention to consume (Hajli, 2014).

### 3.4. Marginalizing the Discourse of Cancer-Related Scientific Knowledge

Cancer-related scientific knowledge is presented on the four cancer websites, including the definition and/or features of different types of cancer disease, the difference between tumour and cancer, the symptoms of a specific cancer, the methods/mechanisms of cancer treatment, and the correction of misleading information that was disseminated among the public. However, the links led to such kind of discourses are marginalized on the website homepages. That is, they are displayed in a form of text links which are in a small font and usually at the top or top left of the homepage (see **Figure 7**). The marginalization may be designed with the purpose of saving room for displaying other information.

In **Figure 7**, the circled text links, which present the name of different types of cancer, occupy much smaller room than does the image next to them on the right side. This image advertises the website per se, on which it says “Authoritative international medical platform” in a much larger font. The marginalization strategy can be viewed as being indirectly associated with the commodification of cancer prevention/management. This is because it helps to create enough room to highlight discourses that can link to the commodification process, discourses for advertising the cancer website, as discussed above.

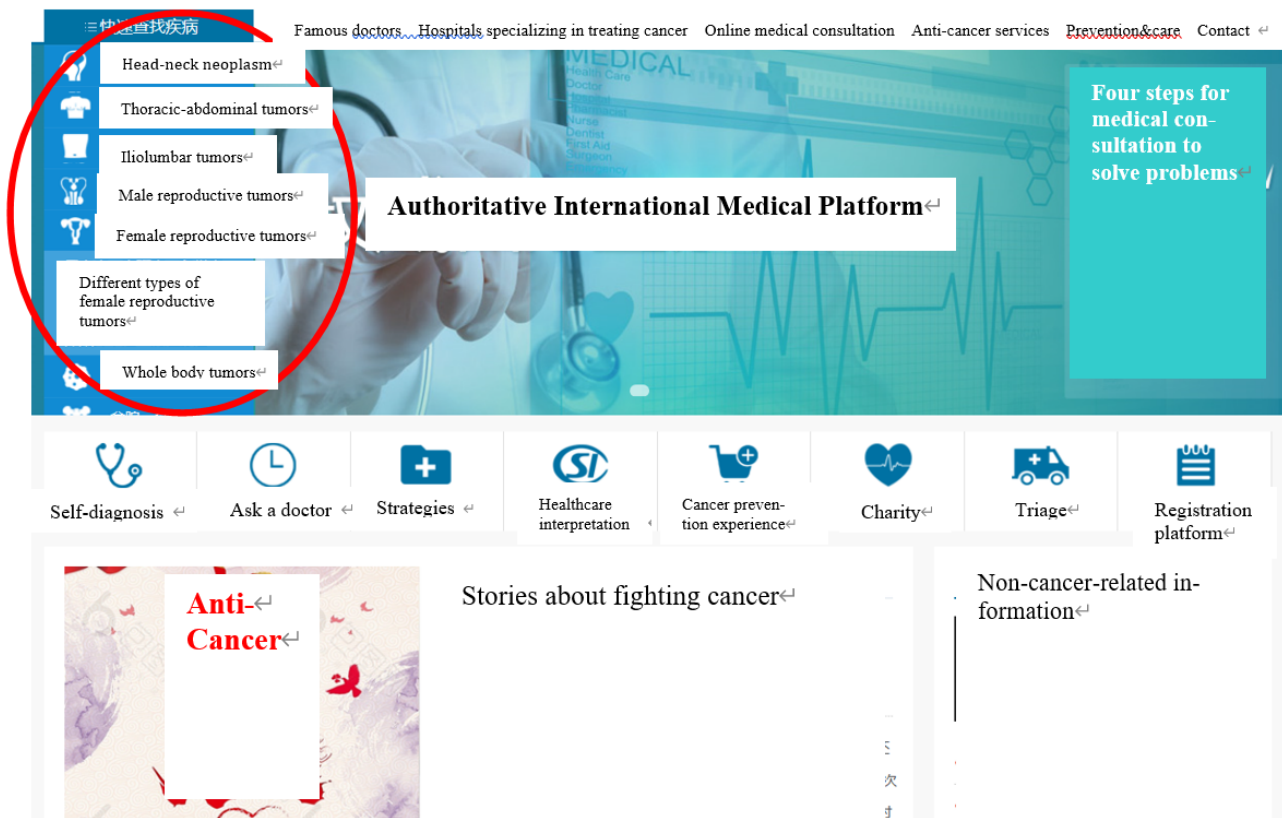


**Figure 6.** Promotion of the social media of a cancer website.

### 3.5. Building Solidarity

The sense of solidarity is created through the design of language and images. As shown in the slogan in **Figure 5** (i.e., “In front of cancer we are no longer helpless”), “we” communicates the meaning that the websites align themselves with their viewers or users. This discursive construction also positions the viewers as a member in the community that deals with cancer. The construction of solidarity is also seen in an image (see **Figure 8**).

In **Figure 8**, the image is a link that leads to a webpage, on which there is an advertisement for medicines that treat cancer. On the right side of the image, there is a person with a skull head. This skull head image may communicate a metaphorical sense, that is, the person symbolizes death. On the left side of the image, there is a group of people. Drawing from the mouth-muffle that each



**Figure 7.** Marginalizing the discourse of cancer-related scientific knowledge.



**Figure 8.** Building solidarity.

person wears or holds, they are presumably patients. It seems that their gazes directly address viewers, which may engage viewers to take certain actions (Kress & van Leeuwen, 1996). One of the possible actions is clicking the image link, which consequently leads the viewers to the webpage advertising certain medicines for dealing with cancer.

The rationale for constructing the sense of solidarity may lie in the collective anxiety or fear toward the possibility of getting cancer or dying of cancer. It is suggested that fear is “significantly a key element” in the use of online health sites or health information seeking (Segal, 2009: p. 363). People’s use of cancer websites may be also driven by fear. The construction of solidarity may impart a message to viewers that their fear is shared by others, that the cancer website can provide a place where people get together to deal with their fear, and that unity can triumph over fear. In this way, the multimodal design which communicates solidarity may increase users’ dependence on the cancer website. Consequently, it may contribute to the commodification of cancer prevention/management, since the use of a cancer website may potentially increase the consumption of the promoted commodities as well as the cancer website per se.

#### **4. Discussion and Conclusion**

This study shows that the selected cancer websites highlight the notion that cancer can be prevented or dealt with through the consumption of certain commodities. Cancer websites are seemingly expected to facilitate viewers acquiring cancer-related knowledge. However, the main focus of the cancer websites in question is advertising or promoting commodities (including the websites per se and their account on social media) that can be connected to cancer prevention/management. While cancer-related scientific knowledge is marginalized, the advertising discourses are highlighted and occupy a relatively large part of the homepage of each selected cancer website. The overall design of those homepages performs the function of promoting self-care to prevent cancer and encouraging viewers to turn to the cancer websites and/or related social networking sites for guides or support. This may contribute to the increase of consumption of the websites/their social networking sites, and of the advertised commodities on those platforms. The multimodal discourse on the homepages is also produced in a way of increasing the public’s choices, so as to “help” them find a way to prevent/deal with cancer. In this way, it may facilitate the process of commodification of cancer prevention and management, since “choice” is the “language of marketplace” (Rothman, 2008: p. 2). The design of cancer website homepages may give too much importance to the preventive or controllable role of the advertised commodities in the cause of cancer prevention/management. This emphasis may foster “a false sense of security” (Nichter, 1989) among viewers who follow the “instructions” of those cancer websites with the expectation of avoiding getting cancer. In addition, when cancer prevention/management is constructed as a commodity that can be attainable through personal efforts, there is

a risk of depreciating socio-political responsibility for the conditions of public health, in particular at the time of environmental deterioration and rapid urbanization and industrialization (see Nichter, 1989).

The cancer websites in question play upon the public's eagerness or expectation of cancer prevention/survivorship in order to get benefits. These link the cause of preventing/fighting cancer to the consumption of certain things. Broccoli that once had its value as a food now is given the exchange value of preventing cancer as an ingredient in health products. Ginseng that once was understood as part of a plant now is promoted as a valuable ingredient in traditional Chinese medicines that enhance immune system, which in turn is relied on to prevent cancer. The genetic testing that was originated in biotechnology now has been commodified as a product for dealing with cancer or predicting the cancer risk. Websites and social networking sites that once were for information-seeking and peer interaction now have been constructed as an assistant which people can rely on in order to prevent/fight cancer. The broccoli, ginseng, genetic testing, and cancer websites/their social networking sites are designed to be associated with cancer prevention/management. When people consume those with the purpose of preventing or coping with cancer, they contribute to the commodification process of cancer prevention/management. In this commodification process, the major beneficiaries may be the owners of those cancer websites, the pharmaceutical industry, and biotechnology companies. Hence, health promotion on those cancer websites may not be for the sake of the public's well-being, but for those beneficiaries to get more profit in a commercialized society.

The word "cancer" has gained a value that can be exchanged and the potential for the accumulation of wealth. This is because the cancer disease has its economic value. This economic value lies in the controllability of such disease, that is, cancer can be prevented and coped with; it also lies in the shift from the production of things for controlling the disease to its distribution or consumption. Besides being endowed with the economic value, cancer is also being constructed as an opportunity, rather than an illness for people to make efforts to maintain health or keep away from cancer (Gibson et al., 2015). Such a construction positions users of cancer websites as potential customers who can afford to catch the opportunity as well as having the financial capital to do so in the cause of cancer prevention and management. In this way, while the commodification privileges those who can pay for the opportunity, it marginalises those who are not able to afford it, or puts financial pressure on them. For future research it is vital to investigate what effects of the commodification of cancer prevention/management or the manipulation of cancer commercialization may have on the public, particularly the cancer patients or their family.

### **Conflicts of Interest**

The author declares no conflicts of interest regarding the publication of this paper.

## References

- BCG & TMI (2020). *2020 Digital Healthcare Insight Report*.  
<http://www.ciaba.cn/ueditor/php/upload/file/20200804/1596504415139646.pdf>
- Blanch-Hartigan, D., & Kasisomayajula, V. (2015). Socioeconomic and Sociodemographic Predictors of Cancer-Related Information Sources Used by Cancer Survivors. *Journal of Health Communication* 20, 204-210.  
<https://doi.org/10.1080/10810730.2014.921742>
- Bol, N., Ellen, M. A. S., Mattijs, R., Jacobus, A. B., Hanneke, C. J. M., Eugène, F. L., & Julia, C. M. (2013). Do Videos Improve Website Satisfaction and Recall of Online Cancer-Related Information in Older Lung Cancer Patients? *Patient Education and Counseling* 92, 404-412. <https://doi.org/10.1016/j.pec.2013.06.004>
- Castleton, K., Thomas, F., Andrea, W. G., Muhammad, A. W., Donna, B. J., Lisa, K., Feng, G. and Ramaswamy, G. (2011). A Survey of Internet Utilization among Patients with Cancer. *Supportive Care in Cancer*, 19, 1183-1190.  
<https://doi.org/10.1007/s00520-010-0935-5>
- Chen, W., Rongshou, Z., Peter, D. B., Siwei, Z., Hongmei, Z., Freddie, B., Ahmedin, J., Xue, Q. Y., & Jie, H. (2016). Cancer Statistics in China, 2015. *CA: A Cancer Journal for Clinicians*, 66, 115-132. <https://doi.org/10.3322/caac.21338>
- Clayman, M. L., Eric, W. B., & Gregory, M. (2008) The Use of Patient and Provider Perspectives to Develop a Patient-Oriented Website for Women Diagnosed with Breast Cancer. *Patient Education and Counseling*, 72, 429-435.  
<https://doi.org/10.1016/j.pec.2008.05.032>
- Ehlers, N., & Shiloh, K. (2012). The Body in Breast Cancer. *Social Semiotics*, 22, 1-11.  
<https://doi.org/10.1080/10350330.2012.640060>
- Elliott, C. (2007). Pink!: Community, Contestation and the Colour of Breast Cancer. *Canadian Journal of Communication*, 32, 521-536.  
<https://doi.org/10.22230/cjc.2007v32n3a1762>
- Ferlay, J., Isabelle, S., Morten, E., Rajesh, D., Sultan, E., Colin, M., Marise, R., Donald, M. P., David, F., & Freddie, B. (2013). *GLOBOCAN 2012 v1. 0, Cancer Incidence and Mortality Worldwide: IARC Cancer Base No. 11. Lyon, France: International Agency for Research on Cancer 2016*. <http://globocan.iarc.fr/>
- Gibson, A. F., Christina, L., & Shona, C. (2015) Reading between the Lines: Applying Multimodal Critical Discourse Analysis to Online Constructions of Breast Cancer. *Qualitative Research in Psychology*, 12, 272-286.  
<https://doi.org/10.1080/14780887.2015.1008905>
- Gibson, A. F., Christina, L., & Shona, C. (2016). Representations of Women on Australian Breast Cancer Websites: Cultural “Inclusivity” and Marginalisation. *Journal of Sociology*, 52, 433-452. <https://doi.org/10.1177/1440783314562418>
- Haase, K. R., Roanne, T., & Wendy, G. (2016) Internet Cancer Information Use by Newly Diagnosed Individuals and Interactions with the Health System: A Mixed Methods Study Protocol. *International Journal of Qualitative Methods*, 15, 1-11.  
<https://doi.org/10.1177/1609406916650902>
- Hajli, M. N. (2014). A Study of the Impact of Social Media on Consumers. *International Journal of Market Research*, 56, 387-404. <https://doi.org/10.2501/IJMR-2014-025>
- Hanson, M. J. (1999). Biotechnology and Commodification within Health Care. *The Journal of Medicine and Philosophy*, 24, 267-287.  
<https://doi.org/10.1076/jmep.24.3.267.2522>
- Henderson, S., & Alan, R. P. (Eds.) (2002). *Consuming Health: The Commodification of*



- Health Care*. Routledge. <https://doi.org/10.1046/j.1365-2524.2002.03843.x>
- Hou, J., & Minsun, S. (2010). The Role of Provider-Patient Communication and Trust in Online Sources in Internet Use for Health-Related Activities. *Journal of Health Communication, 15*, 186-199. <https://doi.org/10.1080/10810730.2010.522691>
- Ivory, M. Y., & Rodrick, M. (2005). Evolution of Web Site Design Patterns. *ACM Transactions on Information Systems (TOIS), 23*, 463-497. <https://doi.org/10.1145/1095872.1095876>
- Koteyko, N. (2009). I Am a Very Happy, Lucky Lady and I Am Full of Vitality! Analysis of Promotional Strategies on the Websites of Probiotic Yoghurt Producers. *Critical Discourse Studies, 6*, 111-125. <https://doi.org/10.1080/17405900902749973>
- Koteyko, N., & Nerlich, B. (2007). Multimodal Discourse Analysis of Probiotic Web Advertising. *The International Journal of Language Society and Culture, 23*, 20-31. <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.544.2585&rep=rep1&type=pdf>
- Kress, G. R. & Theo, V. L. (2001). *Multimodal Discourse: The Modes and Media of Contemporary Communication*. Bloomsbury.
- Kress, G. R., & Theo, V. L. (1996). *Reading Images: The Grammar of Visual Design*. Routledge.
- Lewis, N., Stacy, W. G., Derek, R. F., & Robert, C. H. (2009). Examining Cross-Source Engagement with Cancer-Related Information and Its Impact on Doctor-Patient Relations. *Health Communication, 24*, 723-734. <https://doi.org/10.1080/10410230903264030>
- Lock, M., & Vinh-Kim, N. (2010). *An Anthropology of Biomedicine*. John Wiley and Sons.
- Martinec, R., & Theo, V. L. (2009). *The Language of New Media Design: Theory and Practice*. Routledge.
- Mayer, D. K. (2006). *Information Seeking, Screening and Health Behaviors of Cancer Survivors*. Unpublished Doctoral Dissertation, The University of Utah.
- McMullan, M. (2006). Patients Using the Internet to Obtain Health Information: How This Affects the Patient-Health Professional Relationship. *Patient Education and Counseling, 63*, 24-28. <https://doi.org/10.1016/j.pec.2005.10.006>
- Moran, C., & Christina, L. (2013). Selling Genital Cosmetic Surgery to Healthy Women: A Multimodal Discourse Analysis of Australian Surgical Websites. *Critical Discourse Studies, 10*, 373-391. <https://doi.org/10.1080/17405904.2013.813772>
- National Cancer Institute (2010). *Trends in Cancer Information Seeking (HINTS Briefs 16)*. [https://hints.cancer.gov/docs/Briefs/HINTS\\_Brief\\_16.pdf](https://hints.cancer.gov/docs/Briefs/HINTS_Brief_16.pdf)
- Nguyen, M. H., Julia, C. M. W., Nadine, B., Eugène, F. L., Kristien, T., Anthony, V., & Ellen, S. (2017) Tailoring the Mode of Information Presentation: Effects on Younger and Older Adults' Attention and Recall of Online Information. *Human Communication Research, 43*, 102-126. <https://doi.org/10.1111/hcre.12097>
- Nichter, M. (1989). Pharmaceuticals, Health Commodification and Social Relations: Ramifications for Primary Health Care. In M. Nichter & M. Nichter (Eds.), *Anthropology and International Health* (pp. 233-277). Kluwer Academic Publishers. [https://doi.org/10.1007/978-94-009-2231-0\\_10](https://doi.org/10.1007/978-94-009-2231-0_10)
- Pendergrass, S., Margaret, A. N., & David, H. (2001). Design and Evaluation of an Internet Site to Educate Women with Disabilities on Reproductive Health Care. *Sexuality and Disability, 19*, 71-83. <https://link.springer.com/article/10.1023/A:1010720921585> <https://doi.org/10.1023/A:1010720921585>

- Rider, T., Malik, M., & Timothy, C. (2014). Haematology Patients and the Internet: The Use of On-Line Health Information and the Impact on the Patient-Doctor Relationship. *Patient Education and Counselling*, *97*, 223-238. <https://doi.org/10.1016/j.pec.2014.06.018>
- Rothman, B. K. (2008). New Breast Milk in Old Bottles. *International Breastfeeding Journal*, *3*, e1-e4. <https://doi.org/10.1186/1746-4358-3-9>  
<https://internationalbreastfeedingjournal.biomedcentral.com/articles/10.1186/1746-4358-3-9>
- Segal, J. Z. (2009). Internet Health and the 21st-Century Patient: A Rhetorical View. *Written Communication*, *26*, 351-369. <https://doi.org/10.1177/0741088309342362>
- Snyder, C. F., Amanda, L. B., Antonio, C. W., Michael, A. C., Joseph, M. H., Albert, W. W., & Patient Viewpoint Scientific Advisory Board (2013). Feasibility and Value of Patient Viewpoint: A Web System for Patient-Reported Outcomes Assessment in Clinical Practice. *Psycho-Oncology* *22*, 895-901. <https://doi.org/10.1002/pon.3087>
- Spiegelhalter, D., Mike, P., & Ian, S. (2011). Visualizing Uncertainty about the Future. *Science*, *333*, 1393-1400. <https://doi.org/10.1126/science.1191181>
- Stellamanns, J., Dana, R., Keshav, D., Zita, S., & Jutta, H. (2017). Visualizing Risks in Cancer Communication: A Systematic Review of Computer-Supported Visual Aids. *Patient Education and Counseling*, *100*, 1421-1431. <https://doi.org/10.1016/j.pec.2017.02.003>
- Tonkens, E., Christian, B., Nienke, V. S., & Daniël, V. H. (2013). Pretenders and Performers: Professional Responses to the Commodification of Health Care. *Social Theory & Health*, *11*, 368-387. <https://doi.org/10.1057/sth.2013.5>
- Turchin, A., & Lehmann, A. T. (2000). Active Learning Centre: Design and Evaluation of an Educational World Wide Web Site. *Medical Informatics and the Internet in Medicine*, *25*, 195-206. <https://doi.org/10.1080/146392300750019190>
- Warren, E., Katharine, F., Michela, T., Martin, M., & Cécile, K. (2014). Do Cancer-Specific Websites Meet Patient's Information Needs? *Patient Education and Counseling*, *95*, 126-136. <https://doi.org/10.1016/j.pec.2013.12.013>
- Weinberg, B. D. (2000). Don't Keep Your Internet Customers Waiting Too Long at the (Virtual) Front Door. *Journal of Interactive Marketing*, *14*, 30-39. [https://doi.org/10.1002/\(SICI\)1520-6653\(200024\)14:1<30::AID-DIR3>3.0.CO;2-M](https://doi.org/10.1002/(SICI)1520-6653(200024)14:1<30::AID-DIR3>3.0.CO;2-M)
- Whitten, P., Sandi, S., Samantha, M., & Carolyn, L. (2008). Communication Assessment of the Most Frequented Breast Cancer Websites: Evaluation of Design and Theoretical Criteria. *Journal of Computer-Mediated Communication*, *13*, 880-911. <https://doi.org/10.1111/j.1083-6101.2008.00423.x>
- Wilce, J. M. (2009). Medical Discourse. *Annual Review of Anthropology*, *38*, 199-215. <https://doi.org/10.1146/annurev-anthro-091908-164450>
- Zavestoski, S., Sabrina, M., & Phil, B. (2004). Gender, Embodiment and Disease: Environmental Breast Cancer Activists' Challenges to Science, the Biomedical Model and Policy. *Science as Culture*, *13*, 563-586. <https://doi.org/10.1080/0950543042000311869>
- Zhang, P., & Gisela, M. (2000). Satisfiers and Dissatisfiers: A Two-Factor Model for Website Design and Evaluation. *Journal of the American Society for Information Science*, *51*, 1253-1268. [https://doi.org/10.1002/1097-4571\(2000\)9999:9999<::AID-ASI1039>3.0.CO;2-O](https://doi.org/10.1002/1097-4571(2000)9999:9999<::AID-ASI1039>3.0.CO;2-O)