

# Metaphors Ubiquitous in Computer and Internet Terminologies

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## ABSTRACT

Computer and Internet sciences are developing so rapidly that they are pervasive in every aspect of our society and life, which forms computer and Internet culture. Concomitant with this computer and Internet culture is the large amount of computer and Internet metaphorical language. This article would like to employ the contemporary cognitive linguistic theories of metaphor to make a systematic analysis of the metaphors ubiquitous in computer and Internet terminologies. After that, it probes into the coherence of the metaphors, which has a great impact on the language production of human being in their everyday life.

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## 1. INTRODUCTION

Metaphor is not only a linguistic instrument, but also a cognitive one, which we must use to reveal how we conceptualize things. In fact, there are various ways of realizing metaphorical concepts, among which linguistic metaphor is one of the most popular ways to express how we experience the world.

Metaphors, both visual and linguistic ones, are playing a vital role in our understanding computers and the Internet. However, what we will focus on in this article is the linguistic metaphors ubiquitous in computer and Internet terminologies.

Because linguistic expressions are the main surface representations of conceptual metaphors, we will analyze lots of metaphorical terminologies in the computer and the Internet to explore the conceptual nature of computers and the Internet so as to reveal how we conceptualize them.

There are different kinds of conceptual metaphors for the computer and the Internet. As Lakoff & Johnson (1980) argued, each of these metaphors highlights certain aspects of things, downplays others, and hides still others. i.e. each metaphor focuses on certain aspects of the computer or the Internet, while putting other aspects aside. The features that Lakoff & Johnson mentioned as being "downplayed" are those that are added to the metaphor, but are not highlighted, while the "hidden" aspects are those that are not consistent with the metaphor. The elements, which are hidden by one metaphor, can be highlighted by another. Lakoff & Johnson (ibid: 221) claim that, "the use of many metaphors that are inconsistent with one another seems necessary for us if we are to comprehend the details of our daily existence."

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## 2. RADICAL METAPHORS IN COMPUTER TERMINOLOGIES

### 2.1 A COMPUTER IS A PERSON

(All the examples are from the Internet and we omit the links to save space.)

1. CPU is the core of the computer and a part of calculating. So if the *motherboard* can be looked as *body*, CPU is the *brain*.
2. The *memory* closest to the processor is fast and relatively small, but has a high cost per bit.
3. My computer can't *read* your disk.

This is by no means an exhaustive list. However, it is obvious that we regard a computer as a person when we are with it. A computer in our eyes has a brain (CPU), a body (motherboard), a memory, a face (interface); it has its own language. It can conduct some activities like a human being, such as sleep, wake up, eat, read, write, tell, accept, compile, create, check spelling etc.

### 2.2 A COMPUTER IS A FACTORY

4. Each processor is a stand-alone *machine*.
5. Reference and transaction data can be kept in the data *warehouse* or an operational data store system.
6. *Operating systems* attempt to schedule computational activities to ensure good *performance* of the computing system.

When we are mapping from factory to computer, we mainly highlight the facilities of a computer and its working procedures. Generally, a factory may have such facilities as *machine (processor) or device, pipeline, template, consok, warehouse, operating system* etc. Each *machine* in the *pipeline* should have good *performance* so as to achieve the expected *throughput* of the factory. When it goes wrong, the *machine* needs repairs (*debugging*). Before the products come out, they should be assured good *quality* and then *encapsulated*. To examine the quality of the product, experts should complete testing of the product from different aspects (*benchmark*). Only in this way can the product satisfy the different needs of different customers.

### 2.3 A COMPUTER IS AN OFFICE

7. A variety of landscape and nature photographs are edited or used as computer *wallpaper* or *desktop* background.
8. Drop that *folder* into the *recycle bin*.
9. Please put my *notepad and phonebook* on the *desktop*.

All above expressions imply that we conceptualize the computer as an office. Maybe it's because computers mostly perform office work, it is quite natural for people to borrow common office terms to describe the

corresponding concepts when using a computer. Many user-friendly programs provide a surface screen that establishes a metaphorical link with the category *office*. The operations on computers are simplified as to *open* or *close* some *windows*. The screen is a *desktop* that can be *cleaned up*. You can choose a piece of *wallpaper* to decorate it. There are *folders* for filing items, a *mailbox* for letters and messages, a *clipboard* where items can be temporarily stored, and a *recycle bin* into which superfluous items are dropped.

#### **2.4 A COMPUTER IS A CONTAINER.**

10. I can't get my paper *out of* my computer.
11. Each computer has a *Central* Processing Unit and some *peripheral* devices.
12. *Emptying* the Recycle Bin will *free up* some disc *space*.

The nature of metaphor is to understand one thing in terms of another; we conceptualize the computer as a container and conceptualize the information as being *in* it. So we impose boundaries on a computer—marking off territory so that it has a *kernel* and a bounding surface—whether a wall (*firewall*), a *shell* or an *entry*. You can log *into* the container, get a file *out of* it or just *exit* it. The container has a *central* or *peripheral* part. It has a certain *capacity* or *space*. In fact, in this container metaphor, what we focus on is the *content*, i.e. the data or information stored in the computer. If there is too much information, the space will be *full*, the container will *overflow*, so you should *empty* it or *free up* some *space*.

There may exist other metaphoric mappings that are made with a computer, but the four metaphors "A COMPUTER IS A PERSON", "A COMPUTER IS A FACTORY", "A COMPUTER IS AN OFFICE" and "A COMPUTER IS A CONTAINER" have occupied the majority of our conception about computers, because we have mapped more elements of these four domains onto COMPUTER domain than any other ones.

### **3. RADICAL METAPHORS IN INTERNET TERMINOLOGIES**

Internet is the largest global internet work, connecting tens of thousand of networks worldwide and having a "culture" that focuses on research and standardization based on real-life use. In defining the Internet, we have to resort to metaphors, for we can't even find a non-metaphorical standpoint from which we could look upon the mysterious Internet. It proves how profoundly metaphor has influenced our thinking. However, the Internet is so complex and wide-scoped that it is difficult or even impossible to be represented with a single metaphor. Here we collect several popular metaphors describing the Internet.

#### **3.1 INTERNET IS A HIGHWAY**

The terminology *Highway* was first coined by former vice president of the United States Gore, making an analogy between the information highway and the interstate highway system of their country. According to Palmquist's (2001) research statistics, HIGHWAY metaphor is the most popular one among all the metaphors about the Internet.

13. The Internet dangled the promise that we were going to *cruise the information highway* ...
14. White House counts 2,000,000 cyber *tourists*.

15. Clearing the *roadblocks* on Japan's information highway.

This metaphor reminds us that the Internet is a means of transportation which includes roads, vehicles, traffic etc. There are a lot of vehicles like cars or trucks traveling on the highway all the time. It can lead us to the place where we want to go. When the number of vehicles exceeds a certain limit, vehicles can't move freely, the traffic will become heavy, or in a terrible situation or even in a standstill.

On the other hand, since we consider the Internet as a highway, when the drivers or *tourists cruise, travel or ride* in a certain *route*, they should obey the traffic regulations (*Internet Protocol*) to ensure smooth *traffic*, they may *load up, upload or download* something and they must watch out for the *roadblocks* on it. The government must carry out the *construction* of this important project. Therefore "the concept is metaphorically structured, the activity is metaphorically structured, and consequently, the language is metaphorically structured." (Lakoff & Johnson, 1980: 5)

### 3.2 INTERNET IS A PERSON

Metaphorical personification is the ascription of human-like attributes and characteristics to an otherwise non-human object. It is arguably the most common metaphor used in the computing domain (Marakas 2000: 721). The common and seemingly intuitive practice of ascribing human-like characteristics to the Internet (it *thinks, helps, stores information, runs, is dangerous, catches and transmits viruses*, etc.) in terms of the underlying conceptual metaphor INTERNET IS A PERSON, has become the standard by which we formulate our daily communication on and reasoning about the Internet. The following includes some conventionalized expressions under this conceptual metaphor:

16. Internet *was born* in America.
17. Internet *paralysis*: the delicate Internet is under another attack.
18. Internet has become a good *helper* for the journalists to conduct interviews.

Just like human beings, the Internet can *be born*, can *run* or be *paralysis*; it has its own *language, interface, and capability*; it can also *store and sort information* as a human being so as to be a good *helper* etc. In this way, some of the characteristics of a person are mapped onto the domain of the Internet, which help the readers to better understand the Internet.

The most popular term in PERSON metaphor will be VIRUS. When we take the initiative to call certain destructive computer program "virus" instead of a certain technological term, we intuitively understand the computer program through the pre-existing concept "virus".

some words and expressions describing the virus in a human body are being used to talk and reason about the destructive program on the Internet, such as *replicate, infect, vaccine, kill, source, spread, antivirus, epidemic prevention, erode, dangerous, immune* etc. Viruses have been mapped onto the undesirable, dangerous destructive programs, which replicate themselves, erase files and do harm to computer system etc. Vaccines are mapped onto software designed to detect and stop the progress of computer or Internet viruses;

computer doctors are mapped onto computer technicians, attempting to block the action of the harmful programs and so on so forth.

### **3.3 INTERNET IS CYBERSPACE**

The word “cyberspace”, coined by the science fiction writer William Gibson in 1984, refers to the virtual world created by communication over the Internet, i.e. by combining together all the information systems in the world. Generally, space is a three-dimensional concept, with its boundaries and geographical location. INTERNET IS CYBERSPACE is such a comprehensive metaphor. Our conceptual system of what the cyberspace is and what we can do and experience in the cyberspace depends to a large degree on the cross-domain mappings from the source domain of the geographical and physical space to the virtual cyberspace.

Space has a privileged position as a foundational ontological category in language, a position that most other domains do not share (Lan 2003: 52). Human conception of space appears to structure other parts of the conceptual system through spatial metaphors.

INTERNET IS CYBERSPACE is a typical spatial metaphor, which maps the image-schematic structure of the domain of space onto that of a non-spatial target domain of the Internet. “Space” originally refers to the infinite extension of the three-dimensional field in which all matter exists. The three dimensions contain length, width, and height. In the above examples, *Tele and Terminal* represent the extension of the length field; *Wide/Local* mainly highlights the extension of width field; *on/off, up/down* and *vertical* concentrate on the extension of the height field. And *domain* and *plat* put more emphasis on both length and width extensions. As a result, the virtual Internet world has now got its own spatial structures. Image schemas in various orientations and relations such as UP-DOWN, FRONT-BACK, CENTER-PERIPHERY, OVER, PATH, CONTAINER, LINK are selectively mapped onto the corresponding Internet domain, which make the virtual reality more real, perceptible and comprehensible. Meanwhile, lots of new words are created with the prefix “cyber-”, which means fictitious and virtual, such as Cyber university, Cyber classroom, Cyber company, Cyber community, Cyber market etc.

It's clear that *university, classroom, company, community and market* are organizations or spaces in real life, each having its own boundaries and location. When the prefix “cyber-” is added, they have become the corresponding organizations or spaces on the Internet.

### **3.4 INTERNET IS A COMMUNITY**

COMMUNITY is also another dominant metaphor about the Internet in such an information society. This concept frames our comprehension of the Internet as a mode of communication. With this metaphor, new kinds of social relations and civic life may now be possible in the Cyberspace.

First, once you live in a community, you have your own house with *windows, firewall, wallpaper, back door or mailbox* etc. You may have your own *bookcase, folder, photo book* etc in your room. You can also *clean or tidy*

up your own space (*defragment*) and put the rubbish into the *recycle bin* or *recycle* it etc. When you don't work on the computer at the present, you can set it in a *sleep* mode.

For entertainment, you can *surf* the net, by choosing the *menu* to go *shopping* in the *E-mall*, go *chatting* in the *chatroom*, listen to music in the music *bar* or watch movie in the *cinema* etc. You can gain special service from a certain website as an *ordinary member* or a *VIP* when you *register* yourself and provide your *username* and *password*, or sometimes your *account*, *password* and *email-address*. Otherwise, you can only *visit* it as a *guest*. The computer will *shout* to emphasize what you have written in your email or a newsgroup article with all capital letters.

Community metaphor focuses on the interaction and communication between people in Cyberspace. Communication is a very important aspect of the Internet. It is easy and fast to communicate with other people via the Internet. That is why the Community metaphor has gained its popularity. The main ways of communication over the Internet include *email*, *newsgroup*, *message board*, *forum*, *bbs*, *IRC* (Internet Relay Chat), *MUDs* (Multi-User Dimensions), *Blog*, and many more. These diminish the usual effects of distance, and allow people in different parts of the world to communicate with each other without delay. This community has become a *Global Village*.

### 3.5 INTERNET IS A LIBRARY

Another common metaphor is INTERNET IS A LIBRARY which we are bound to encounter whenever we are surfing online or involved in topics about the Internet.

It's true that the Internet is building a digital *library* for us. What is in this library is the abundant *information* it holds. And the information is presented in different forms. For example, *reference books* may include *dictionaries*, *encyclopedias*, *atlases*, *thesauruses*, *almanacs*, and the like; *recreational books* may include the *paperback pocket books*, *science fiction books*, *fiction and non-fiction books*, *comic books*, *magazines*, and others; and *scholarly books* may include *textbooks*, *law books*, *economic books* and other similar works. They are just like the books, references or documents in our school library. Now they have even got a new name, that is, *e-books*. In these *books*, you may find *front covers*, *back covers* and *pages*, which are *numbered* and may contain *texts*, *illustrations*, *photographs*, or a combination of the three. They may have the *old edition*, *new edition* or *latest edition*, *Chinese or English Version*. And *All Rights Reserved*.

When we want to search a website on the Internet, we may find it with *searching engine* such as Google, Baidu etc, and then *open* and *browse* it with a *browser* such as *Internet Explorer*, *Mathxon* or *Tecent Traveller* etc. When you are *browsing a website or an e-book*, you may *skip* it, *scan* it or to *read* it in detail. We can also *turn pages forward or backward*. You may mark a certain *page* with a *bookmark* before you *close* it whenever you wish. You may have a *bookcase* to *store* it or even put it into *Favorite*.

Finally, we have *cybrarians* on the Internet just as we get a librarian in our school library. They are professional researchers on line who collect information by means of network technology, analyze what they

have collected and then provide the useful information for the netizens. At the same time, they act as the navigator in making use of information.

### **3.6 INTERNET IS A MARKET**

As we all know, there are several famous shopping websites on the Internet, such as ebay.com, amazon.com, taobao.com etc. Meanwhile, many companies and individuals have announced to start their business on the Internet. In this way, the whole Internet is becoming a market. These websites are constructed and utilized in a metaphorical way. The constructors and users of these websites obviously map their experience of the daily shopping onto the websites.

Take ebay.com for example, when you are shopping on it, you will follow at least four steps:

- Step 1 Look for products or suppliers/sellers who produce that product by using the search engine or just browsing by category.
- Step 2 Contact the suppliers/sellers. You can send inquiries to the sellers, whom you find through browsing or searching, about the details of the goods and the prices.
- Step 3 Pay the money. Once the buyer and seller come to an agreement on the price of the goods, the buyer will give a certain sum of money to the seller, usually through e-payment.
- Step 4 Receive the goods. When the seller receives the money, he will send the goods to the buyer.

These steps are really similar to those in our daily shopping. The metaphor INTERNET IS A MARKET has given the birth to so many shopping websites and enabled them to get wide popularization. A number of words and expressions which we encounter frequently in real daily shopping have been borrowed to and widely used in the Internet shopping. The following are some good examples: *Shopping* online, *E-mail*; *Shopping mall* online, *Monopoly street*, *Shop* online, *Bank* online, *Online public sale*, *Webpage advertisement*, *Shopping guide*, *My shopping cart*, *Contact the seller/buyer*, *Pay* online, *Cyber money* etc.

### **3.7 INTERNET IS A SEA**

Suppose you tell a person that your hobby is to *surf* on the Internet, to *swim* freely or *dive* in the Internet, the person will probably infer from your words that Internet may be something like sea or ocean where people can *surf*, *swim* or *dive*. This supposition can tell us at least one thing: our conceptualization of the abstract Internet is partly based on the image schema of the sea via metaphorical mapping. What can be done in the sea, like surfing, swimming, navigating, playing, diving or even being drowned, can also happen on the Internet.

The mapping from the source domain of sea onto the Internet is by no means arbitrary, but rather out of some reason. Apart from the similar exciting feeling gained from both the Internet surfing and the real surfing, other similarities also exist for us to prove the rationality of the mapping. For example, the sea is deep and endless, many creatures are living there. Similarly, Internet is a huge space without any limitations. And almost all things, as long as one can imagine, are possible to be found on the Internet. According to the survey of Palquist (2001: 28), there are following reasons why people consider the Internet as Sea: it is "unexplored but can be exploited," "complex with many creatures," "deep and filled with so much potential," "can be either

clean or dirty,” “it can drown you or you can swim in it” and “it is an untamed force,” “it permits people diving in it”, and “people may be easy to get lost”. And all these are the characteristics of a real sea.

#### 4. METAPHORICAL COHERENCE ACROSS DIFFERENT VEHICLES IN COMPUTER AND INTERNET METAPHORS

When we conceptualize COMPUTER or INTERNET, we have formed several different metaphors. COMPUTER can be conceptualized as PERSON, FACTORY, OFFICE, CONTAINER, while INTERNET is HIGHWAY, PERSON, CYBERSPACE, COMMUNITY, MARKET, LIBRARY and SEA. i.e. the same tenor has got several different vehicles. How does it happen? In cognitive perspectives, it has resulted from people’s multidimensional thought toward a tenor. When people want to understand a concept completely, they should comprehend it in all possible aspects. They may use a metaphor in comprehending one aspect of the concept while another metaphor in another aspect. For example, we define INTERNET is a LIBRARY because we focus on the content (information) INTERNET holds, as for MARKET metaphor, we concentrate ourselves on the trade on the Internet etc. Obviously, no one of the metaphors about COMPUTER or INTERNET is sufficient to give us a complete, consistent, and comprehensive understanding of all the aspects of COMPUTER or INTERNET. But combined together, they can do the job of giving us a coherent understanding of what COMPUTER or INTERNET is. We will now take up the question of what it means for various different metaphors, each of which partially structures a concept, to jointly provide a coherent understanding of the concept as a whole. (Lakoff & Johnson, 1980: 89)

##### 4.1 COHERENCE WITHIN A SINGLE METAPHOR

We can get some idea of the mechanism of coherence within a single metaphorical structuring by starting with the metaphor A COMPUTER IS A PERSON. This metaphor has to do with the structure of a computer and the actions controlled by the different parts of a computer. Here are some obvious instances of the metaphor:

A COMPUTER IS A PERSON

19. The computer is *ignoring* your command.
20. The computer in my office is getting *stupid*.
21. I become more productive because the computer system *serves* me.

One thing we know about person is that A PERSON DEFINES A BRAIN

22. He is a *smart* boy.
23. I'd *think twice about* this.
24. The customer *complained* the poor quality of the TV set he had bought a week before.

Putting together A COMPUTER IS A PERSON and A PERSON DEFINES A BRAIN, we get: A COMPUTER DEFINES A BRAIN

25. If someone behaving suspiciously can be identified by camera attached to a *smart* computer, crimes could be stopped before they happen.



26. My computer is *thinking about* the problem.
27. If the processor *complains* that it cannot find either trn or rn, you have to ask for help to find out what the local newsreader of choice is.

Moreover, the brain of a person can conduct a series of actions.

THE BRAIN OF A PERSON CAN CONDUCT A SERIES OF ACTIONS

28. Father always *reads* newspapers in the morning.
29. He *wrote* down what had happened on that day.
30. I *woke up* at 11 o'clock this Sunday.

Given that A COMPUTER DEFINES A BRAIN and THE BRAIN OF A PERSON CAN CONDUCT A SERIES OF ACTIONS, we get

THE BRAIN OF A COMPUTER CAN CONDUCT A SERIES OF ACTIONS

31. My computer can't *read* your disk.
32. The computer *writes* the data to the sequential file.
33. In Windows, why won't my computer *wake up to run* a scheduled Symantec Anti-virus scan?

Here we have a set of cases that fall under the metaphor A COMPUTER IS A PERSON. What makes them systematic is a pair of metaphorical entailments that are based on two facts about persons.

*The facts about persons:*

A PERSON DEFINES A BRAIN

THE BRAIN OF A PERSON CAN CONDUCT A SERIES OF ACTIONS

*The metaphorical entailments:*

A COMPUTER IS A PERSON

A PERSON DEFINES A BRAIN

Therefore, A COMPUTER DEFINES A BRAIN

A COMPUTER IS A PERSON

THE BRAIN OF A PERSON CAN CONDUCT A SERIES OF ACTIONS

Therefore, THE BRAIN OF A COMPUTER CAN CONDUCT A SERIES OF ACTIONS

Here metaphorical entailments characterize the *internal* systematicity of the metaphor A COMPUTER IS A PERSON, that is, they make coherent all the examples that fall under that metaphor.

#### **4.2 Coherence across Different Metaphors**

A COMPUTER IS A PERSON is only one of the metaphors for computers, so is INTERNET IS A HIGHWAY for INTERNET. This metaphor highlights or talks about the process, traffic and facilities of INTERNET. But when we want to talk about the content of INTERNET, we use another metaphor INTERNET IS A LIBRARY. A library can be viewed as defining a certain building with a limited space and as holding books and materials (which may vary in amount and forms). We use the INTERNET IS A LIBRARY metaphor when we want to highlight any of these aspects of INTERNET.

#### INTERNET IS A LIBRARY

34. The *table of contents* of a *webpage* is normally put on the top of the *first page*.
35. Having finished reading the *e-magazine*, I returned it to my *bookshelf*.
36. *Cybrarians* collect and select information for us.

#### INTERNET IS A HIGHWAY

37. *Internet Protocol* (IP) enables *traffic* to be *routed* from one network to another.
38. Your system manager can *load up* a single Netware *gateway* that all the other PCs on the network can use.
39. Put *billboards* on the information highway.

Since the purposes of the HIGHWAY and LIBRARY metaphors are different, that is, since they are used to focus in detail on different aspects of INTERNET (process, traffic and facilities versus content), we would not expect these metaphors to overlap completely. It is possible in some cases to focus jointly on both the HIGHWAY (process) and LIBRARY (content) aspects of INTERNET. Thus we get certain mixed metaphors that display both of these aspects at once.

Overlap between HIGHWAY and LIBRARY metaphors:

40. I *followed* the E-Mule Setup *Wizard* to *download all the materials* I had *searched*.
41. Having read *the website guide*, she was *on her way to search* some fashion *magazines*.
42. I *accessed this site* to read the famous *book* by George Lakoff.

What makes this overlap possible is that the HIGHWAY and LIBRARY metaphors have shared entailments. Both metaphors allow us to distinguish the process on the Internet from the content. In the HIGHWAY metaphor, the path corresponds to the form of searching on Internet and the ground covered corresponds to the content. When we are going around in circles, we may have a long path, but we don't cover much ground; that is, INTERNET doesn't have much content. In the HIGHWAY metaphor, the longer the path (the longer one searches on the INTERNET), the more ground is covered (the more content INTERNET holds). In the LIBRARY metaphor, the bounding surface of the library corresponds to the form one searches on INTERNET, and what is in the library corresponds to the "content" of INTERNET. In a library that is designed and used most efficiently, all of the bounding surface is used to hold content. Ideally, the more surface there is (the longer one travels on INTERNET), the more substance there is in the library (the more content INTERNET holds). As the path of the highway unfolds, more and more of the surface defined by that path is created, just as more and more of the surface of the library is created. The overlap between the two metaphors is the progressive creation of a surface. As INTERNET covers more ground (via the HIGHWAY surface), it gets more content (via the LIBRARY surface).

What characterizes this overlap is a shared entailment that arises in the following way.

*A nonmetaphorical entailment about highways:*

As we travel on a highway, more of a path is created.

#### A PATH IS A SURFACE.

Therefore, as we travel on a highway, more of a surface is created.

A metaphorical entailment about Internet (based on a highway):

INTERNET IS A HIGHWAY

As we travel on a highway, more of a surface is created

Therefore, as we search on the Internet, more of a surface is created

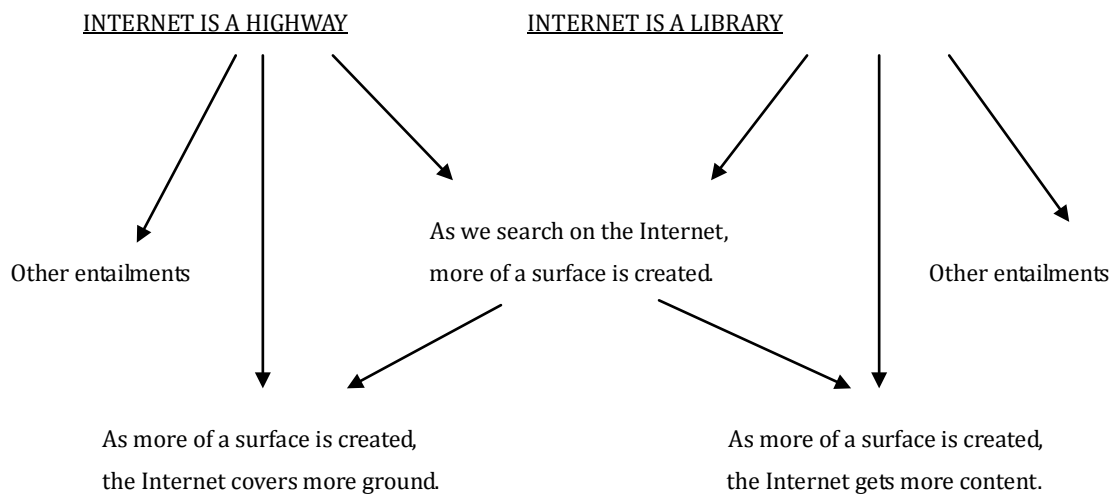
A metaphorical entailment about Internet (based on a library):

INTERNET IS A LIBRARY.

As we search in a library, more of a surface is created.

Therefore, as we search on the Internet, more of a surface is created

Here the two metaphorical entailments have the same conclusion. This can be represented by the accompanying diagram.



It is this overlap of entailments between the two metaphors that defines the coherence between them and provides the link between the amount of ground INTERNET covers and the amount of content it holds. This is what allows them to “fit together”, even though they are not completely consistent, that is, there is no “single image” that completely fits both metaphors. So generally when metaphors are coherent but not consistent, we should not expect them to form consistent images. And most often, what we get is coherence instead of consistency between them, because there is a partial satisfaction of both purposes of the two metaphors. For instance, the HIGHWAY metaphor highlights both direction and progress toward a destination. The LIBRARY metaphor highlights the content with respect to its amount, classification, quality, and boundaries. The *process* aspect of the HIGHWAY metaphor and the *content* aspect of the LIBRARY metaphor can be highlighted simultaneously because the content increases as the Internet progresses. And, as we see, this results in permissible mixed metaphors above.

In the same way, we can find the overlap entailments between INTERNET IS A MARKET metaphor and INTERNET IS A LIBRARY metaphor because a market also has a surface, and as we search in a market, more of a surface is created, namely, the area a market covers makes possible overlaps with the LIBRARY metaphor. So in each case of HIGHWAY, LIBRARY, MARKET metaphors, the common thing is that the *surface* defines the *content*. We call these surface “content-defining surfaces”. Here are two examples:

43. The cybrarian informs me to log into this site to read the best seller.  
LIBRARY HIGHWAY MARKET

As we see in the examples above, there is coherence not only between the HIGHWAY and LIBRARY metaphors, but also across all the three metaphors based on the fact that all the three have content-defining surfaces. As INTERNET proceeds, more of a surface is created, and hence INTERNET gets more content. This

overlap among the three metaphorical structuring of the concept allows above mixed metaphors.

In fact, computer and Internet are related to each other very closely. One cannot be independent without the other. Computer can be best used only when connected to the Internet while one can't surf the Internet without a computer. It is the same with the computer metaphors and Internet metaphors. They are always mixed in use.

44. As you *surf* the net, you may run into a few *boundaries* where a *password* will be required. The password is your *key* to such things as *e-mail* or *on-line banking*. When you are finished *surfing*, it is wise to close your browser *window* and *empty* your *cache*. This will *lighten the load* on your CPU, so you can do other *tasks*—such as *copying files*—without the burden of your *travels weighing down* the processor.

CONTAINER: *boundaries, cache, empty* OFFICE: *copy files*

FACTORY: *weighing down, tasks*

SEA: *surf, surfing* HIGHWAY: *lighten the load, travels*

COMMUNITY: *key, email, password, window*

MARKET: *on-line banking*

As we see in these examples, different computer metaphors and different Internet metaphors are mixed in use. The italicized words may seem random at the first sight, but they are factually part of whole metaphorical systems that together serve the complex purpose of characterizing the concepts of COMPUTER and INTERNET in all aspects, as we conceive them. When we comprehend the sentences or paragraphs, we are actually shifting from one metaphor to another and search the overlapping entailments between them. Such overlaps, we claim, can be characterized in terms of shared metaphorical entailments and the cross-metaphorical correspondences established by them.

## 5. The Impact of Computer and Internet Metaphors on Daily Language Use

Computer and Internet terms not only attach new meanings to existing words, but also provide us with a lot of new words which are widely accepted. Moreover, these new words are coming back to our daily life by means of metaphors again, the way our human beings cognize the world. They are having great impact on our daily language use, written or spoken. Some people are even prone to say “computer jargons” in their daily life.

If people now say that something was not saved on their “hard drive,” they might not literally mean in their computer, but rather in their own memories. Since today the Internet is increasingly synonymous with the computer, it has become an important source for contemporary mental processing metaphors. “Bandwidth” is now part of the figurative vocabulary, as in “Do you have the bandwidth for that?” roughly glossed as scope and ability. And if once we “wrapped our heads around an idea,” we now “download” and “link” to it, as we download and link to the sites on the Internet.

In fact, the metaphor talked in this part is different from the same one we have talked about before. They no longer share the same meaning. In the above metaphors people have mapped the characteristics of PERSON, HIGHWAY etc. onto COMPUTER or INTERNET, which are abstract and difficult to understand for them. Accordingly, people will accept and better understand the terminologies and make better use of computer and the Internet with the help of the metaphors.

However, as time goes, computer and the Internet have become part of people's daily life. They are so familiar to people that people prefer to use these computer and Internet metaphorical terminologies to talk about some more abstract and newer things in their life. That is to say, people are mapping contrarily i.e. from COMPUTER or INTERNET to PEOPLE or OTHER THINGS. The same metaphorical terminology in computer and the Internet may have different meanings in different situations of daily life.

On the other hand, people always prefer novel expressions to cliché when they are using language. So some newly sprouted things like computer and the Internet and their terminologies are always borrowed into the everyday life domains. In this way they can achieve some special rhetorical and social effects. (Shu, 2000)

Here are some examples:

45. Everyday patterns of behavior can be *programmed* too.
46. Since she's started looking for a new job, Diana has spent a lot of her evenings *networking*.
47. The ministers have a full *menu* of options before them as they consider what to do in the present time.
48. The gifted person has superior *information processing* skill. He or she can retrieve from memory, for example, the word for warm-blooded animals more quickly than others.

## **6. CONCLUSION**

Computer and Internet metaphors help us to understand an ever-changing and growing field by using words and phrases that relate to other more common objects and concepts. We conceptualize computer and the Internet through metaphors. A computer can be comprehended via person, factory, office and container. While the Internet can be metaphorize into highway, person, cyberspace, community, library, market and sea.

In fact, computer and the Internet are penetrating everywhere in our study, work and life so that we cannot live without them. And it's natural for us to bring about the computer and Internet terms into our daily language use. As we see above, most people today use computer and Internet metaphors everyday without ever realizing that they are using metaphors. Consequently, the new computer and Internet metaphorical terms have largely enriched people's vocabulary and brought people a lot of fun and enjoyment.

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### **References**

- Ali. A. Nazari Shirehjini, 2004. A Novel Interaction Metaphor for Personal Environment Control: Direct Manipulation of Physical Environment Based on 3D Visualization. *Computers & Graphics*, 28: 667-675.
- Fiumara, GC, 1995. *The Metaphoric Process: Connections between Language and Life*. New York: Routledge.
- F.Ungered, H.J.Schmid, 2001. *An Introduction to Cognitive Linguistics*. Beijing: Foreign Language Teaching and Research Press.
- Hongyan RAO, 2006. *The Study of Metaphors: A Cognitive Approach on the Internet*. PhD thesis. Zhejiang University.
- J. L. Alty et al, 2000. A Framework for Engineering Metaphor at the User Interface. *Interacting with Computers*, 13: 301-322.
- Lakoff George, 1987. *Women, Fire and Dangerous Things*. Chicago: University of Chicago Press.
- Lakoff G, M. Johnson, 1980. *Metaphors We Live By*. Chicago: University of Chicago Press.
- Lakoff G, M.Turner, 1989. *More than Cool Reason: A Field Guide to Poetic Metaphor*. Chicago and London: The University of Chicago Press.
- Lan Chun, 2003. *A cognitive Approach to Spatial Metaphors in English and Chinese*. Beijing: Foreign Language Teaching and Research Press.
- Liyun FAN, 2005. A Cognitive Approach to Computer Metaphors in English. *Applied Linguistics*, 1: 116-122..
- Marakas, George M. et al, 2000. A theoretical Model of Differential Social Attributions towards Computing Technology: When the Metaphors Becomes the Model *Human-Computer Studies*, 52: 719-750
- NingYu, J, 1998. *The contemporary Theory of Metaphor*. Amsterdam / Philadelphia: John Benjamins.

Palmquist, Ruth, 2001. A Cognitive Style and Users' Metaphors for the Web: An Exploratory Study. *The Journal of Academic Librarianship*, 27: 24-32.

Qingping AN. Bin HUANG, 2001. Impact of computer language on human language. *Chinese Science & Technology Translators Journal*, 8: 44-48

Ratzan Lee, 2000. Making Sense of the Web: A Metaphorical Approach, *Information Research* 6: 85-95,  
Stanney et al, 2003. Identification of Metaphors for Virtual Environment Training Systems. *Ergonomics*, 46: 197-219.

Ward Mitchell Cates, 2002. Systematic Selection and Implementation of Graphical User Interface Metaphors. *Computers & Education*, 38: 385-397.