

Information Sources about Resilience and Resiliencia

Dr. Lee G. Burchinal, April, 2006
burchinal@erols.com

Introduction

This paper provides the fourth annual report on sources and frequencies of citations to resilience and resiliencia on the Internet and in the professional literature covered by seven major databases¹ in the United States. The search results presented in this report replicate those done in 2003, 2004 and 2005. The 2006 searches were conducted on April 10, 2006². Identical search terms were used in all four searches; the same search engine, Google, <www.google.com>, was used for all Web searches; and the same databases were searched. The findings from these searches are used to describe trends in the frequencies of references to resilience and resiliencia on Web pages and in professional literature.

In addition, this paper includes information on the number of searches of ResilienceNet, a Web site that provides information (in English) on a wide range of topics related to resilience, by persons from South American countries.³

Web Searches

Resilience

The first search each year was a global, unrestricted search for Web pages, using only the term “resilience”. Findings from these searches, presented in Table 1, shows a clear, substantial increase in the number of pages from each year to the next, with the most dramatic increase occurring between 2005 and 2006.

Table 1. Number of Web pages dealing with resilience, 2003-2006

| Year of search | Number of pages | Percentage change |
|-----------------|-----------------|--------------------|
| September, 2003 | 394,000 | |
| September, 2004 | 835,000 | 2003 to 2004, 112% |
| July, 2005 | 4,000,000 | 2004 to 2005, 379% |
| April, 2006 | 30,000,000 | 2005 to 2006, 650% |

¹ As used here, database refers to electronic indices to literature, such as journal articles, books, chapters in books, research reports and other forms of literature.

² The date of the 2006 searches is cited because the number of Web pages on any topic changes daily, as do the number of literature citations in databases. Each day, Web search engine and database managers add new sources. Consequently, a search done, even on the following day, generally will show more pages or references than the day before.

³ This paper was prepared for presentation at the 1er Seminario Internacional Resiliencia, 26-27 May 2006, sponsored by Sociedad Peruana de Resiliencia, Lima, Peru. Consequently, searches for frequency of viewing ResilienceNet were limited to viewers from Peru and other South American countries.

The number of pages dealing with resilience continues to explode. By mid-April, 2006, there were approximately 30 million pages containing the word “resilience.” The frequency of resilience Web pages in 2006 represents an increase of 7,514% since 2003.

One must be cautious, however, in interpreting the increase in resilience-related pages. The searches for pages dealing with resilience were described as being “global”. This is an elegant way of saying that they were not very discriminating. Global searches produce a wide range of results with varying degrees of relevance and usefulness. To illustrate, among the first ten pages listed for this search are several significant and relevant pages with trustworthy information. These pages, which also were found in previous years, are:

- **The UK Resilience site** <www.ukresilience.info/index.shtm>, which contains updated information and advice for emergency responders, schools and businesses on developing resilience against terrorism and civil disturbances and actions to take in the event of an incident.
- The outstanding resilience site of the **American Psychological Association** <www.apahelpcenter.org/featuredtopics/feature.php?id=6>, which contains the groundbreaking paper, “*The Road to Resilience*,” and additional, useful papers.
- Also, as before, **ResilienceNet**, continues at <resilnet.uiuc.edu>. Among other topics, this site provides screened information about research on resilience, literature reviews about resilience and descriptions of programs for promoting resilience.

A new entry in the top-ten list deserves comment. This is *A Guide for Promoting Resilience in Children: Strengthening the Human Spirit* by Dr. Edith Grotberg, a speaker at this conference.⁴ The *Guide* is available free, in full text from Resilnet, at <resilnet.uiuc.edu/library/grot95b.htm>.

Also, as in previous years, there also were a number of pages not related to our interest in human responses to adversities. Among the first ten pages listed by Google was a site on computer and network protection and another on conservation ecology. Resilience is a prominent concept in each field, as it is in other non-human areas of inquiry. Any global or unrestricted search will almost certainly include pages not related to one’s specific interest.

While impressive, large numbers of hits are also overwhelming. What do you do when confronted with references to 30 million Web pages? Although frequencies this large are not too common, unrestricted searches, particularly on popular topics, frequently produce mind-numbing overload. Fortunately, there are ways to limit or restrict searches to produce a smaller, more useful and more manageable numbers of “hits”. One way is to limit selection of pages by adding additional search terms to make each search more specific. In Web searching terms, this is called “narrowing” the search. Additional terms used, one at a time with resilience, were: “children”, “youth”, “families”, “community” and “mental health”. By adding each additional term, search engines, such as Google, Yahoo! and others look for pages that contain both words; for example, pages that contain resilience AND children. Using the additional terms was expected to not only

⁴ See footnote 3.

reduce the number of pages found, but also to eliminate most pages not dealing with some aspect of human behavior. The terms used were selected arbitrarily. Depending on one's interest, any other term or set of terms could be used.

Table 2 compares the frequencies for pages dealing with resilience and each of the additional terms found in 2006 with those found in 2005. Comparisons with previous years (2003 and 2004) are not provided because the trend was consistent over the years, with a substantial increase found in each year to the next. The 2005 to 2006 comparison demonstrates the pattern.

Table 2. Number of Web pages dealing with resilience as limited by an additional term, 2005 and 2006

| Search | Number of pages | | Percent change |
|------------------------------|-----------------|------------|----------------|
| | 2005 | 2006 | |
| Resilience and children | 801,000 | 8,380,000 | 946% |
| Resilience and youth | 406,000 | 4,080,000 | 905% |
| Resilience and families | 1,190,000 | 12,200,000 | 925% |
| Resilience and community | 1,219,000 | 12,500,000 | 925% |
| Resilience and mental health | 490,000 | 3,750,000 | 665% |

Narrowing the searches by adding the additional terms produced the expected results: the numbers of pages found were greatly reduced and the relevance of pages to resilience was increased. Still, very large numbers of pages were found for all searches. The largest numbers of pages was for “resilience and community” (approximately 12.5 million) and for “resilience and families” (approximately 12.2 million). Numbers for children, youth and mental health, although very substantial, were much smaller. These results suggest that interest in human resilience has taken on a broader sociological dimension, apart from its origins in psychology.

When confronted with large numbers of hits, even after adding additional terms, online searchers generally add additional limits to searches. One technique is to require that the word of interest, in this case, resilience, must appear in the title of the page⁵. This decision was based on the assumption that pages with resilience in their titles focus more specifically and substantially on resilience than pages where resilience is mentioned somewhere in the text of the site.

Numbers of hits for the “all in title” searches are provided in Table 3.

Adding the requirement that resilience appear in the title of the site greatly reduced the number of pages found, with the numbers of hits ranging from 154 (resilience and mental health) to 621 (resilience and children).

⁵ This can be done under the “Advanced Search” option that appears to the right of the “Search” button on the Google home page.

Table 3. Number of Web pages with resilience in titles of pages, 2003 to 2006

| Search terms used | Number of pages | | | | Percent change 2005 to 2006 |
|------------------------------|-----------------|------|------|------|--------------------------------|
| | 2003 | 2004 | 2005 | 2006 | |
| Resilience and children | 191 | 479 | 665 | 621 | -7% |
| Resilience and youth | 86 | 131 | 149 | 224 | 50% |
| Resilience and families | 20 | 51 | 93 | 183 | 97% |
| Resilience and community | | 44 | 245 | 322 | 31% |
| Resilience and mental health | | 17 | 66 | 154 | 133% |

The decrease in occurrence for pages dealing with resilience and children presents a quandary. Since search engines, such as Google, add new pages daily, we should have expected more pages for resilience and children in 2006 than in 2005, yet we found a decrease. Google apparently changed how it defined and selected pages dealing with resilience and children in either or both of the time periods preceding the 2005 and 2006 searches.

Otherwise, there were substantial increases in the number of pages with resilience and the other terms in their titles from each year to the next. The pages found in 2006 revealed a wide range of interest in resilience and a variety of efforts to promote resilience as a human capacity.

Resiliencia

Beginning with the 2004 searches, the term “resiliencia” was added. Adding resiliencia was based on the hypothesis that the increasing number of programs on this topic in Spanish-speaking countries, particularly South America, would be reflected in an increased number of Web pages and in references in the current literature. At the time, the author failed to notice that search strategies could include the selection of various languages. Consequently, even though a Spanish term, resiliencia, was being used, the search was done in English. Despite this error, the results are considered worthy of reporting because, even using English, they show a consistent increase in numbers of pages dealing with resiliencia from 2004 through 2006. Later, results for 2006 are corrected, based on a repeat set of searches using Spanish as the search language.

Returning to the initial searches for resiliencia using English, the first search was done using resiliencia as the sole search term. As shown in Table 4, pages devoted to resiliencia also increased substantially each year from 2004 to 2006.

Table 4. Number of Web pages dealing with resiliencia, 2004 to 2006

| Year of search | Number of pages | Percentage change |
|----------------|-----------------|-------------------|
| 2004 | 10,900 | |
| 2005 | 29,800 | 2004-2005 173% |
| 2006 | 180,000 | 2005-2006 504% |

A very large increase in the number of pages with resiliencia in their titles was found in 2006 compared with 2005 – an increase over 500%. This increase was over 3 times as great as found between 2004 and 2005. Clearly, interest in resiliencia is growing, reflecting widespread in the Spanish-speaking world. From 2004 to 2006, there was an increase in excess of 1,500%.

With approximately 180,000 pages dealing with resiliencia, further limitation in searching was warranted. Additional search terms, namely, “ninos”, “familias” and “comunidad,” were added to make the searches more specific. Results are shown in Table 5.

Table 5. Number of Web pages related to resiliencia as limited by additional terms, 2004 to 2006

| Search terms used | Number of pages | | | Percent change 2005 to 2006 |
|-------------------------|-------------------|--------------|---------------|--------------------------------|
| | September 2004 | July 2005 | April 2006 | |
| Resiliencia y ninos | 403 | 9,890 | 62,500 | 531% |
| Resiliencia y familias | 2,190 | 6,180 | 43,900 | 610% |
| Resiliencia y comunidad | 3,680 | 10,800 | 68,200 | 531% |

Each comparison between 2005 and 2006 showed a very large increase, continuing the trend seen for previous years.

These numbers are large enough to warrant still further limitation. Therefore, the searches were repeated with limitation to pages in which terms for each search appeared in the titles of the pages. Results are reported in Table 6.

Table 6. Number of Web pages with resiliencia in titles of pages, 2005 and 2006

| Search terms used | Number of pages | | Percent change |
|-------------------------|-----------------|-------------|----------------|
| | July, 2005 | April, 2006 | |
| Resiliencia | 472 | 702 | 49% |
| Resilience y ninos | 1 | 1 | 0% |
| Resiliencia y familias | 0 | 0 | 0% |
| Resiliencia y comunidad | 2 | 6 | 200% |

There was a sizable increase in the number of pages with resiliencia in their titles, from 472 in 2005 to 702 in 2006. Interested readers may wish to repeat this search and browse the sources provided to see the range and significance of the information available on these pages. In 2006, only 7 pages were found with resiliencia and the three limiting terms in their titles.

Resiliencia, Spanish language searches

The searches for pages dealing with resiliencia conducted in April, 2006, using English as the search language were repeated on June 29, 2006, using Spanish as the search language. Table 7 reports the initial set of results.

Table 7. Number of Web pages related to resiliencia and additional Spanish terms, June, 2006

| Search terms used | Number of pages June, 2006 |
|-------------------------|-------------------------------|
| Resiliencia | 205,000 |
| Resiliencia y ninos | 83,400 |
| Resiliencia y familias | 96,200 |
| Resiliencia y comunidad | 86,500 |

Use of Spanish instead of English as the search language substantially increased the number of pages found for resiliencia, up from 180,000 using English in 2006 to 205,000 using Spanish. Increases also occurred for searches with the additional terms (ninos, familias, comunidad).

With the numbers of pages as shown in Table 7, further limitation in searching was undertaken using the “all in title” requirement. Results are shown in Table 8.

Table 8. Number of Web pages with resiliencia and additional Spanish terms in their titles, June, 2006

| Search terms used | Number of pages June, 2006 |
|-------------------------|-------------------------------|
| Resiliencia | 756 |
| Resiliencia y ninos | 1 |
| Resiliencia y familias | 2 |
| Resiliencia y comunidad | 9 |

Adding the “all in title” greatly reduced the number of pages found, although “resiliencia” as a sole term produced a large number of hits. Results for searches with additional terms ranged from 1 (ninos) to 9 (comunidad).

Databases

Resilience references

Table 9 shows the increases in the numbers of references found in various databases in 2004, 2005 and 2006 using the term “resilience”. In this table, the superscript “f” after the name of the

database indicates it is freely available as a Web site; the superscript “s” indicates that the database is available only on a subscription basis.

Table 9. Comparisons of number of references related to resilience found for selected databases, 2004 to 2006

| Database | Number of references found in | | | Percent change |
|--|-------------------------------|--------------|---------------|----------------|
| | September 2004 | July 2005 | April 2006 | |
| MEDLINE (medical literature, www.nlm.nih.gov) ^f | | | | |
| Resilience and children | 205 | 224 | 237 | 6% |
| Resilience and family | 104 | 116 | 126 | 9% |
| PUBMED (a public-oriented database, www.ncbi.nlm.nih.gov/entrez/) ^f | | | | |
| Resilience | 1,251 | 1,468 | 1,620 | 10% |
| Resilience and children | 301 | 340 | 370 | 9% |
| Resilience and family | 242 | 282 | 313 | 11% |
| PsycINFO (professional psychological literature) ^s | | | | |
| Resilience and children | 1,035 | 1,092 | 1,253 | 15% |
| Resilience and family | 969 | 1,140 | 1,253 | 10% |
| PROQUEST (multiple databases) ^s | | | | |
| Resilience and children | 5,130 | 5,917 | 7,005 | 18% |
| Resilience and family | 5,273 | 6,114 | 7,460 | 22% |
| ArticleFirst (an index to articles in 12,000 journals in science, social sciences, humanities, business, medicine, technology, and popular culture) ^s | | | | |
| Resilience and children or youth | 15,681 | 17,144 | 18,651 | 9% |
| Social Science Abstracts (sociological literature) ^s | | | | |
| Resilience and children or youth | 10,515 | 11,106 | 11,637 | 5% |
| Digital Dissertations (Ph.D. dissertations) ^s | 1,415 | 1,602 | 1,757 | 10% |

There was a steady yearly increase in the number of references to resilience for each search. These frequencies, however, were far smaller than frequencies found for Web pages dealing with resilience. Also, growth rates were very small compared to those observed for changes in the numbers of Web pages for the same years.

Finding far fewer references to resilience in databases as compared with the number of Web pages related to resilience is not surprising. The databases cite refereed literature, which provides editorial and quality control over additions to databases, whereas many Web pages are made available with no formal quality control or review.

Resiliencia references

Finally, the databases listed above were searched again using the term of “resiliencia.” PROQUEST, which covers a number of professional fields, led with 43 references in 2006, up from the single reference found in 2005. PsycINFO, with its worldwide coverage of the

professional psychological literature, showed a slight increase in the number of references to resiliencia, from 14 in 2005 to 18 in 2006. Only 4 references to resiliencia were found in the other searches.

Searches of ResilNet Originating in South American Countries

Figure 1 provides the frequencies of searches of ResilNet done between January 1 and April 23, 2006, by persons from countries in South America.

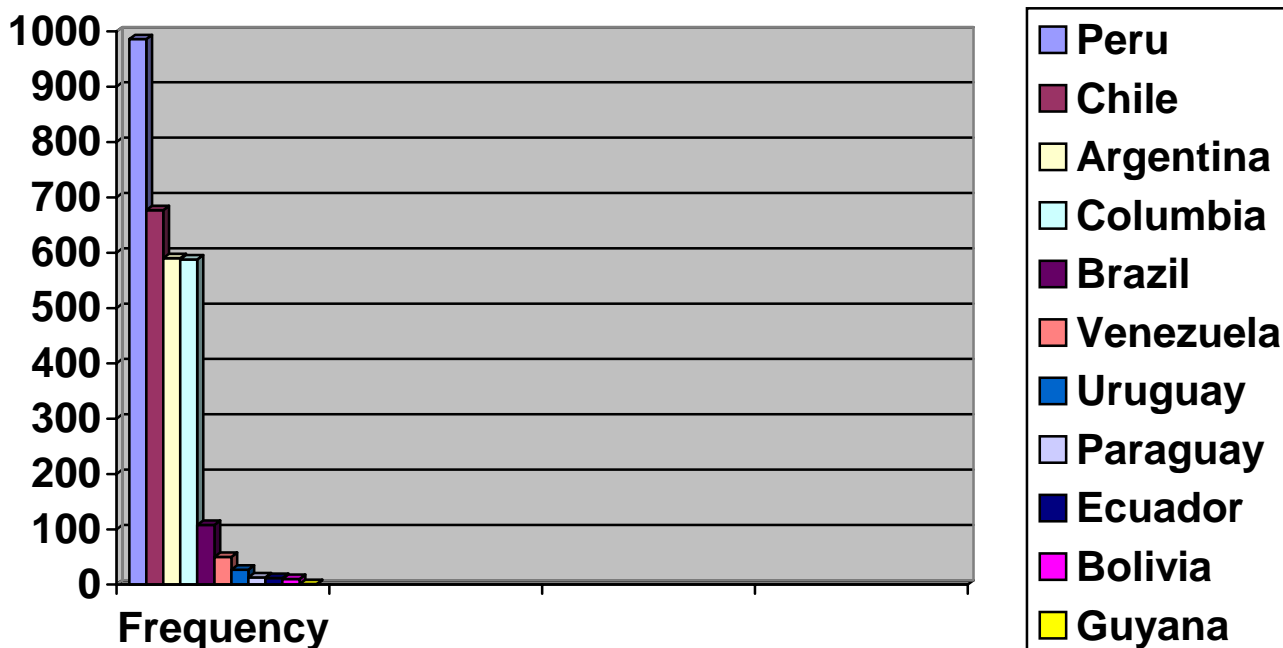


Figure 1. Frequencies of searches of ResilienceNet from South American countries

In total, persons from 11 countries of South America performed 3,032 searches of ResilienceNet in the first part of 2006. By country, Peru led with 986 searches, followed by Chile (677), while Argentina and Chile had similar frequencies, 590 and 588, respectively. Smaller numbers were found for Brazil (108), Venezuela (50) and Uruguay (27). Thirteen (13) searches originated in Paraguay, 12 in Ecuador, 10 in Bolivia and 1 in Guyana.

The frequencies of searches from persons in the 11 countries attest to the widespread interest in resilience in South America.

Conclusions

From the foregoing results, we may conclude that:

1. Web pages devoted to resilience and resiliencia continue to grow at phenomenal rates. In April, 2006, 30 million Web pages related to resilience were found. Over 200,000 pages were found for resiliencia using Spanish as the search language. The results also suggest that the

percent changes in numbers of pages between 2005 and 2006 were relatively similar for resilience (650%) compared to that for resiliencia (505%).

2. English-language databases published in the United States report a modest to large number of references related to resilience but contain few references to resiliencia. This may reflect either or both of two conditions: (1) relatively little is being published on resiliencia in major Spanish-language professional journals; or (2) the databases based in the United States do not cover many Spanish-language journals that are publishing articles on resiliencia.

3. For Spanish readers, there is now a substantial, varied and growing body of information of information in Spanish for use in developing, evaluating, and refining programs for promoting resilience in children, youth, families, and communities. Much of this information is only a click away on the Internet.

4. Interest in English-language materials related to resilience in South America is widespread, as shown by searches of ResilienceNet among persons from countries in South America.