

CURRENT COMMENTS

ISI® Is Now Helping To Bridge The Three (Not Two) Cultures

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Recently I gave a talk to the Norwegian Association of Research Librarians about ISI®'s new *Arts & Humanities Citation Index™* (*A&HCI™*).¹ My discussion stressed that *A&HCI* can become an important link between science and the arts—or between what C.P. Snow christened the “two cultures.”²

The concept of the two cultures has received considerable attention in the many years since Snow first used the term. I am sure it is not an original idea to suggest that it is an over-simplification to divide society into just two polar cultures. Indeed, Snow himself noted that two is a very dangerous number and said that for a long time he had considered further refinements. He respected the arguments of American sociologists who had told him they “vigorously refuse to be corralled in a cultural box with people they wouldn't be seen dead with, or to be regarded as helping [artists and literary intellectuals] to produce a climate which would not permit of social hope.”²

In any case, I believe that so far

as the published literature is concerned, it is accurate to identify at least three discrete cultures: the sciences, the social sciences, and the arts and humanities. Such terms are often loosely used and variously interpreted. By *culture* I mean a particular type of intellectual development; by *sciences* branches of study based chiefly on objective quantitative hypotheses, such as biology, chemistry, or physics; by *social sciences* the study of society and individual relationships, generally regarded as including sociology, psychology, anthropology, economics, political science, and history; and by *humanities* areas of knowledge concerning the human race and its culture, such as philosophy, literature, and the fine arts. The definitions are derived from the *American Heritage Dictionary*.³

I am particularly conscious of the gaps between the two cultures of the sciences and social sciences when I see an article title in one edition of *Current Contents®* (*CC®*) which also ought to be listed in

another. This occurs quite frequently for articles that cover the history of a science. For example, some physicists would be interested in the occasional articles on the history of physics which appear in journals like *ISIS*. Similarly, some historians would be interested in the occasional articles on the history of physics appearing in physics journals. But soaring costs won't permit us to cover *all* such articles in more than one *CC* edition. For broad current awareness, the ISI Press Digest tries to compensate for this restriction, but it can only go so far.⁴

For current awareness on a more selective basis, our *ASCA*[®] service already does bridge the gap between the sciences and the social sciences. It can alert you to articles appearing in any of the 5,000 journals we now cover for the six editions of *CC*. No matter whether you categorize your subject area as science or social science, *ASCA* searches through both types of journals, looking for items relevant to your profile. Thus, you are assured of being alerted to articles of interest that do not get listed in the *CC* edition you happen to read. Since January, we have been processing nearly 1,000 journals for coverage in the new *Arts & Humanities Citation Index*. When we are able to add these journals to *ASCA*, this service will bridge all *three* cultures.

Unfortunately, most *CC* readers do not use *ASCA*. I've never fully understood why this is so. I suspect that most people just don't want to

be bothered preparing interest profiles. They won't believe us when we say that in 90% of the cases we can do it for them "automatically." By automatically I mean that given the smallest amount of information about your interests, our profilers can almost algorithmically expand it into an effective search profile.⁵

While *ASCA* can help bridge the cultural gap for current articles, bridges are needed for retrospective searching, too. We recently made an important improvement in our computer programming that enables us to indicate in our citation index those authors whose work is used in both the sciences and the social sciences. For example, Masters and Johnson's classic work *Human Sexual Response*⁶—which deals primarily with the physiology of sex—is cited in journals covered by both the *Science Citation Index*[®] and the *Social Sciences Citation Index*[™]. If you were to refer to the *SCI*[®] first, you would find that during 1977 the Masters and Johnson book was cited 22 times. You would also find a note saying that 19 additional citations would be found in the *SSCI*[™] from journals covered exclusively in that index. Figure 1 shows the citations to *Human Sexual Response* that would be located only in the *SCI*, only in the *SSCI*, and in both.

Of course, it is not all that surprising to find a work like *Human Sexual Response* cited in both the *SCI* and *SSCI*. That sexual response has both physical and social aspects is recognized by all modern re-

Figure 1: Papers located through a citation search of the 1977 *SCI* and *SSCI* using *Human Sexual Response* as cited item.

CITED ITEM Masters, William H & Johnson, Virginia E. *Human sexual response*. Boston, MA: Little, Brown & Co., 1966. 366 pp.

CITING ITEMS LOCATED ONLY THROUGH *SCI*

AUTHOR	JOURNAL	VOL	PG	YR
Blasco L	Fertility and Sterility	28	1133	77
Ellenberg M	Mt Sinai J of Medicine	44	495	77
Fonkalsrud EW	Annals of Surgery	186	221	77
Cuharay DK	Fertility and Sterility	28	943	77
Kavanagh T	Canadian Medical Assoc J	116	1250	77
Shaw A	J of Pediatric Surgery	12	331	77

CITING ITEMS LOCATED ONLY THROUGH *SSCI*

AUTHOR	JOURNAL	VOL	PG	YR
Aldous J	Annual Review of Sociology	3	105	77
Bennett KC	Australian J of Social Issues	12	3	77
Bieber I	J of the Amer Academy of Psychoanalysis	5	195	77
Brecher J	International J of Health Services	7	89	77
Byrne D	Personality and Social Psychology Bulletin	3	3	77
Cantondutari A	Revista Latinoamericana de Psicologia	9	137	77
Coutts LM	Personality and Social Psychology Bulletin	3	519	77
Farley FH	Archives of Sexual Behavior	6	105	77
Knapp TJ	Nursing Research	26	281	77
McConnell LG	J of Marriage and Family Counseling	3	55	77
Meyer RG	J of Homosexuality	2	123	77
Mosher DL	J of Sex & Marital Therapy	3	229	77
Osborn CA	J of Sex Research	13	250	77
Sarrel PM	Archives of Sexual Behavior	6	341	77
Schlesinger B	Canadas Mental Health	25	15	77
Solnick RL	Archives of Sexual Behavior	6	1	77
Staib AR	Amer J of Clinical Hypnosis	19	201	77
Stanford D	Amer J of Nursing	77	608	77
Wiest WM	Sex Roles	3	399	77

CITING ITEMS LOCATED THROUGH EITHER *SSCI* OR *SCI*

AUTHOR	JOURNAL	VOL	PG	YR
Appel CP	Wiener Klinische Wochenschrift	89	289	77
Derogatis LR	Amer J of Psychiatry	134	385	77
Elstein M	British Medical J	1	369	77
Hecker BR	Amer J of Obstetrics & Gynecology	129	543	77
Levine SB	Annals of Internal Medicine	86	588	77
Marecek J	Psychiatry	40	323	77
Mudd JW	Amer J of Psychiatry	134	922	77
Paradowski W	Archives of Physical Medicine and Rehabilitation	58	53	77
Phoenix CH	J of Comparative and Physiological Psychology	921	697	77
Reynolds BS	Psychological Bulletin	84	1218	77
Scalzi CC	Western J of Medicine	126	237	77
Wallot H	Union Medicale du Canada	106	829	77
Weinrich JD	Behavioral Ecology and Sociobiology	2	91	77
Wilson GT	Behaviour Research and Therapy	15	239	77
Wittkower ED	Amer J of Psychotherapy	31	66	77
Zeiss AM	J of Consulting and Clinical Psychology	45	891	77

Figure 2: Papers located through a citation search of the 1977 *SSCI* and *SCI* using *Statistical Package for the Social Sciences* as cited item.

CITED ITEM Nie N H, Hull C H, Jenkins J C, Steinbrenner K & Brent D. *Statistical package for the social sciences*. New York, NY: McGraw-Hill, 1970. 700 pp.

CITING ITEMS LOCATED ONLY THROUGH SSCI

AUTHOR	JOURNAL	VOL	PG	YR
Arndt J	European J of Marketing	11	13	77
Basler HD	Homo	28	35	77
Byrne DC	Australian and New Zealand J of Psychiatry	11	179	77
Cummings S	J of Negro Education	46	62	77
Fairbrother RW	Educational Research	19	92	77
Flango VE	J of Politics	39	41	77
Gibbins R	Canadian J of Political Science	10	341	77
Hirschfeld LA	Ethnology	16	147	77
Hopkins DR	Research Quarterly	48	535	77
Leece J	British J of Political Science	7	529	77
MacManus SA	Western Political Quarterly	30	263	77
Nevo B	Megamot	23	40	77
Pashley BW	Durham Research Review	8	31	77
Quinn JF	J of Human Resources	12	329	77
Sansonfisher RW	Multivariate Behavioral Research	12	357	77
Scanlan PM	Australian Geographical Studies	15	22	77
Selby JW	Personality and Social Psychology Bulletin	3	412	77
Shupe AD	Social Forces	55	613	77
Stock WP	Drug Forum	5	335	77
Thomson TL	Socio-Economic Planning Sciences	11	61	77
Travis CB	Contemporary Educational Psychology	2	373	77

CITING ITEMS LOCATED ONLY THROUGH SCI

AUTHOR	JOURNAL	VOL	PG	YR
Aird TJ	SIAM J on Numerical Analysis	14	296	77
Birmingham BC	Canadian J of Botany	55	1453	77
Boere CG	Ardea	64	210	76
Burns PE	Canadian Medical Assoc J	116	1131	77
Cohen E	Thrombosis Research	10	587	77
Collatz J	Monatsschrift fur Kinderheilkunde	125	594	77
Double JA	Biomedicine Express	27	11	77
Hanawalt RB	Soil Science	123	25	77
Karlberg BE	Scandinavian J of Clinical & Laboratory Investigation	37	521	77
Mamrak SA	Computer	10	32	77
McCarthy MA	Food Technology	31	86	77
Ramirez I	J of Comparative and Physiological Psychology	91	174	77
Rogers RE	Developmental Biology	55	148	77
Romkens MJM	Soil Science Society of Amer J	41	954	77
Ross ST	Copeia	1977	561	77
Ryan PM	J of the Fisheries Research Board of Canada	34	2079	77
Seveen K	J of Periodontal Research	12	340	77
Tizard IR	J of Hygiene	78	275	77
Triupp JH	Lancet	2	233	77

Figure 2 (continued)

CITING ITEMS LOCATED THROUGH EITHER SCI OR SSCI

AUTHOR	JOURNAL	VOL	PG	YR
Anonymous	New England J of Medicine	296	1185	77
Anderson RE	Amer Behavioral Scientist	20	367	77
Andrews G	Amer J Epidemiology	105	324	77
Bertinetti JF	J of Clinical Psychology	33	416	77
Carruth BR	J of the Amer Dietetic Assoc	70	42	77
Coelho AM	Amer J of Physical Anthropology	46	253	77
Feshbach S	J of Educational Psychology	69	299	77
Finlayjones RA	Psychological Medicine	7	475	77
Fischer EH	J of Nervous and Mental Disease	164	107	77
Ghodsian M	British J of Social and Clinical Psychology	16	23	77
Hewitt JK	Psychological Reports	40	183	77
Jakobovits C	J of the Amer Dietetic Assoc	71	405	77
Kern JC	J of Studies on Alcohol	38	89	77
Lifshitz M	Annals of the New York Academy of Sciences	285	338	77
Malecot A	Phonetica	34	19	77
Martin RL	Diseases of the Nervous System	38	974	77
Mueller WH	Annals of Human Biology	4	1	77
Neuwirth W	Angewandte Informatik	1977	235	77
Oldroyd RJ	Psychological Reports	41	187	77
Ostrander J	J of the Amer Dietetic Assoc	70	267	77
Palmer A	Amer J of Pharmaceutical Education	41	264	77
Richards LG	Ergonomics	20	499	77
Ronen S	J of Applied Psychology	62	582	77
Smith RJ	Amer J of Physical Anthropology	47	195	77
Smith TJ	Amer Review of Respiratory Disease	116	31	77
Wolck W	Amer Behavioral Scientist	20	733	77

searchers. Similarly, we would expect articles and books dealing with statistical methods to be cited by authors in both the sciences and social sciences. But even with statistics, we sometimes see unexpected applications. Nie's *Statistical Package for the Social Sciences*⁷ deals with a programming language designed expressly for social sciences research. If you were to check the 1977 *SSCI* you would find that Nie's book was cited 47 times. You would also find a note telling you that it was also cited 19 times in science journals covered exclusively in *SCI*. Figure 2 shows the different citations to this book located

through *SSCI* and *SCI* searches.

Another example of how *SCI/SSCI* cross-reference notes help pull together widely scattered citations involves an article on the population problem published in *Science*.⁸ In "The Tragedy of the Commons," noted biologist Garrett Hardin of Stanford University says that the solution to the population problem is moral and not technical. During 1977 this article was cited 10 times in journals exclusively covered by the *SSCI* and 3 times in journals exclusively covered by the *SCI*.

Last June, in the *American Journal of Psychiatry*, Herbert

Wagemaker of the University of Louisville School of Medicine and Robert Cade of the University of Florida School of Medicine reported some work showing that schizophrenia could be physiologically based.⁹ A female schizophrenic suffering a kidney disorder was treated with dialysis, and unexpectedly her schizophrenic symptoms disappeared. Four other schizophrenics were dialyzed and they experienced similar remissions. If further studies confirm these highly tentative results, the Wagemaker-Cade article is likely to be cited both by scientists investigating the biochemistry of the illness and by psychotherapists reporting on their use of dialysis as a treatment.

During the first year of the *Arts & Humanities Citation Index* we will not provide comparable cross-overs between it and the *SCI* and *SSCI*. I

have no doubt, however, that once *A&HCI* is fully operational we can implement a similar cross-reference feature. How many such relationships will we see? More than a few, I'm sure. I recently read of a master's program in art conservation which requires a student to "combine the skills of an organic chemist with those of a studio artist and art historian."¹⁰ And the impact of electronics on music is apparent to anyone who turns on a radio.

I admit that I am quite excited about the prospect of soon seeing the *Arts & Humanities Citation Index* join the *Science Citation Index* and *Social Sciences Citation Index* upon my bookshelf. I firmly believe that when this happens the combination will help to establish a genuine pattern of cross-cultural communication—a goal that ISI has persistently and patiently pursued.

REFERENCES

1. Garfield E. Will ISI's *Arts & Humanities Citation Index* revolutionize scholarship? *Current Contents* No. 32, 8 August 1977, p. 5-9.
2. Snow C P. *The two cultures and the scientific revolution—the Rede lecture, 1959*. London: Cambridge University Press, 1959. 52 pp.
3. Morris W, ed. *The American Heritage Dictionary*. New York: American Heritage Publishing Co., Inc., 1969. 1550 pp.
4. Garfield E. ISI's Press Digest helps narrow the gap between the scientist and the layman. *Current Contents* No. 20, 16 May 1973, p. 5-6. Reprinted in *Essays of an information scientist*. Philadelphia: ISI Press, 1977, Vol. 1, p. 448-9.
5. -----, The information-conscious university and ASCA software. *Current Contents* No. 37, 12 September 1977, p. 5-7.
6. Masters W H & Johnson V E. *Human sexual response*. Boston: Little, Brown & Co., 1966. 366pp.
7. Nie N H, Hull C H, Jenkins J C, Steinbrenner K & Bent D. *Statistical package for the social sciences*. New York: McGraw-Hill, 1970. 700 pp.
8. Hardin G. The tragedy of the commons. *Science* 162:1243-8, 1968.
9. Wagemaker H & Cade R. Use of hemodialysis in chronic schizophrenia. *American Journal of Psychiatry* 134:684-5, 1977.
10. Spencer I. Vigor is restored to masters in art preservation. *Philadelphia Inquirer*, 27 November 1977, p. 8-B.