

## A FRAMEWORK FOR ANOTHER HISTORIOGRAPHY OF PSYCHOLOGY

ROBERT HOGENRAAD

Senior Research Associate to the Belgian National Foundation for Scientific Research,  
Psychology Department, Catholic University of Louvain  
Running head: ARCHIVE ANALYSIS OF PSYCHOLOGY

### SUMMARY

Archives inevitably include a certain proportion of fiction. In psychology, such a fiction accounts for the state of the history of the subject as myth-making process. By focusing on the texts of which psychology is made and on their analysis, psychologists uninformed in history can extract and analyze the information contained in the documents written by their fellow psychologists, and arrive in this manner at a better understanding of their own discipline, now made meaningfully patterned. Seven representative publications of Mary Whiton Calkins on the self-concept from 1900 to 1930 were content analyzed. Literature, scientific or otherwise, is conceived of as being driven by pressure towards novelty. Such a pressure was assessed, using Martindale's Regressive Imagery Dictionary within the PROTAN system of computer-aided content analysis, together with another appropriate dictionary of emotion. The analysis provides hints as to the process by which the notion of self-concept as elaborated by Mary Calkins had declined by 1930 despite its having brought out many pertinent points.

A framework for another historiography of psychology

### I. Framework

#### FICTION IN THE ARCHIVES

The textual status of science is an issue with powerful potential both for the conception of history of science and for the understanding of the evolution of science by scientists themselves. Of the conception of history, that of sciences for example, we will say precious little (see Elton, 1991, and also Collinson, 1992, for more on this point). As to the understanding of the evolution of science by scientists themselves, it is plain that there should be no necessity for scientists to be historians in order to understand the movement of thought in their respective fields. Accordingly, the point made by the present paper is that because scientists express themselves through language, with style and rhetoric, there is enough in the archives available to them to add value to the evidence without having to commit themselves to such unwarranted psycho-historical interpretations as were ridiculed by Dæese (1985, especially his chapter seven). The compass of the present

paper is limited to the characterization of the main features of an innovative and heuristic methodology devised to integrate the diversity of facts, techniques, and results, that often causes psychology to appear to be getting out of hand (Staats, 1991). A brief textual analysis of the grand theory of the self-concept in Mary Calkins's psychological philosophy illustrates and completes the framework.

Nothing is presently plainer than the inescapable fact that whatever the care with which dense archives are thoroughly analyzed, there is always room for fiction, myth and legends to squeeze through and eventually to muddle the facts. Such has been the case in psychology, which has practically bred history out of itself. There is only one way to overhaul present-day psychological science into a stately human science capable of coming to terms with its own history and at the same time to moderate the hosannas that too often posture as history of psychology (see Furumoto, 1989 for more on this issue). This allows psychologists uninformed in historical science to extract and analyze the voluminous information contained in the texts written by their fellow psychologists. By so doing, one bypasses the tricks of the fiction in the archives while turning away from psychological bigotry to concentrate on meaningful patterns that constitute the legitimacy of psychology as cumulative science.

### **PRESSURE TOWARD NOVELTY: THE ANATOMY OF LITERARY AND SCIENTIFIC EVOLUTION**

Scientific literature signally shares with the rest of literature a characteristic "pressure towards novelty", the rationale for which has been elaborated recently by Colin Martindale (1990) in a general theory of aesthetic evolution. Since then, this line of inquiry has been pursued by Hogenraad, Bestgen, and Durieux (in press) so as to break down the traditions psychology invents for itself. Be that as it may, and no matter the epochs or the styles, poets, novelists, and scientists alike must obey the rule of keeping their readership attentive. In this regard, novelists and scientists are well aware of the high capacity of novelty as a paramount source of arousal.

However, art and science diverge on the choice of the means to achieve novelty. In the novel, for example, ever more images and metaphors (concrete thinking) succeed in maintaining the interest of readers at level, at least for some time and to a certain point, beyond which, all possible metaphors and images being exhausted, the only way out of the critical situation thus created is the formation of a new literary style. This sequence of concrete thinking, crisis, and change of style has been shown (Martindale, 1990) to take place across different aesthetic media, both on the aggregate level of epochs and on the individual level of particular artists.

In science, in particular on its cognitive side, the rule of the genre is the formulation of universal laws. Such laws allow indeed the processing of information with economy by categorizing varied inputs under a single heading, that is, in chunks variously called paradigms, hypotheses, typologies, etc. (Fisher, 1992, p. 55). As a corollary, we may expect, as well in individual scientists as in institutionalized science, symbolic conceptual thinking to grow in proportion (Hayes, 1992) until a point of relative relapse when the chunks in fashion lose their efficacy as economical tools of thought, either because new facts cannot be explained by them, or because they are challenged by new facts or new chunks. At this point, indeed, new images and metaphors are likely to be put forward to do duty again and bear the onus of scientific progress till symbolic thinking comes into force again.

### THE VISIBILITY OF SCIENTIFIC EVOLUTION

So much for the anatomy of scientific evolution; there remain the benefits to be reaped from the enterprise. By imposing on the documents produced by psychologists the criteria psychology imposes on its own field, one makes psychology only more consistent with itself. For psychology, doing so is like raising a periscope above its otherwise rather limited horizon. Visibility is improved even though no certitudes emerge. But visibility fosters conjectures and undercuts interpretations. A long while back, when we were not yet used to seeing the words "artificial" and "intelligence" fettered to each other, Turing (1950), asking the question "Can machines think?", observed on the side that "the popular view that scientists proceed inexorably from well-established fact to well-established fact, never being influenced by any unproved conjecture, is quite mistaken" (p. 442). The reconciliation of memory and conjectures, or simply the possibility to anticipate ahead of one's time, however modestly, are the major gains to be reaped from psychological historiography. This idea has even been framed recently into a program for the university: "It is, says Pelikan (1992, p. 119), a significant mark of the development and maturation of the natural sciences within the university that in recent decades scientists have been deepening their own historical consciousness about their fields". Hence Pelikan's insistence that "historical perspective is needed to dispel the mythology that has arisen (...) about the processes of scientific discovery and creativity" (1992, p. 119).

The idea of submitting written documents to rational treatment is not unprecedented. Far from falling in the marginalia of sciences, this issue was raised to the status of "a science of sciences" by Newman (1959,--I. University Teaching, III. Bearing of Theology on Other Knowledge, p. 88). Gergen (1973), after Stevens (1939), revived this notion that was later given some emphasis even by some historians of psychology (Watson, 1979). More recently, this idea was summarized under the somewhat official label of

"psychology of science" (Borgman, 1989; Gholson, Shadish, Neimeyer, & Houts, 1989; Korn, Davis, & Davis, 1991; Leahy, 1992; Martindale, 1990; Simonton, 1992). Among the various ways to achieve a rational treatment of science, contemporary content analytic strategies offer a sound psychological engineering particularly suited to extracting, analyzing, and synthesizing the information sheathed in archival data (Habermas, 1966/1987, p. 52)

### **CONTENT ANALYSIS OF ARCHIVAL DATA**

Content analysis is detailed for the purpose of monitoring all the complexity that is measurably present in any kind of text. The analysis of scientific archives is expected to reduce the complexity of science. Generally speaking, complexity as is found in texts can be ordered in two basically opposite ways; that is, one chooses either to conquer the text by imposing on it one's own rule --say one's own hypothesis--, or to interpret the text as if "from inside". In the latter case, glossing over the text leaves it unaltered, but in the former, one changes the text.

Content analytic strategies mirror these two basic ways of considering text. To the conquering mode corresponds a strategy that uses value-laden dictionaries devised to evince what the analyst is looking for; to the "contemplative" mode corresponds a strategy based upon a search for meaningful contiguities existing between text words<sup>1</sup>.

The particular historiography one is focused on here is Mary Calkins's idea of the self-concept. Measuring at a distance the scientific evolution of the notion of self-concept in Mary Calkins's writings is all the more appropriate in that her system of psychology has been shown by Heidebreder (1972, p. 57) to have many of the characteristics of a scientific paradigm. This paradigm, says Heidebreder, was present even as of 1900. We have thus a pertinent argument to test out the cognitive dynamics in Calkins's writings from 1900 to 1930.

### **II. The textual analysis of Mary Calkins's grand theory of the self-concept: Data, results, discussion**

#### **MARY WHITON CALKINS (1863-1930)**

Mary Whiton Calkins is presented by some (Viney, 1969, pp. 354-355; Leahy, 1987, p. 277) as an opportunist suffragette advocating her own model of the self-concept, while she is presented by others (Heidebreder, 1972, p. 56) as the eminent pioneer of an integrated system of self-psychology. All the same, whatever she was, she was so unwaveringly. If for

no other reason, she will and must be remembered as the inventor of the "method of paired associates" although, as Madigan and O'Hara (1992, p. 171) point out, she never used the term herself. As a good measure of the extent to which hegemony of a few opinion leaders goes along with ochlocracy by shrewd followers, her name is not even mentioned in Stevens's 1951 Handbook of Experimental Psychology; and, in Boring's 1950 History of Psychology, her name is mentioned only as but one of Cattell's students.

From the point of view of women's history (Furumoto, 1989), Mary Calkins was the first woman to be elected President of the APA in 1905. Before that, however, it is sad to report, she had been denied the title of Ph.D. in psychology by Harvard University on the grounds of being a woman. These and other events are told in greater detail by herself first, in her autobiography (Calkins, 1961), then by Heidbreder (1972), and finally by Furumoto (1979, 1989) and Furumoto and Scarborough (1986). Mary Calkins's contribution to psychology divides into two distinct periods. Of the first period, devoted almost exclusively to work in experimental psychology (Madigan & O'Hara, 1992), we will have little to say. The period after 1900 was everything that the first was not, with cogent ideas of a theoretical and philosophical nature. In particular, the development of a system of psychology of the self-concept was here of the first importance. The present analysis focuses on the post-1900 period.

According to Heidbreder (1972, p. 57), to the extent that Mary Calkins's system of self-concept had many of the Kuhnian characteristics of a possible paradigm, the latter was fully present by 1900 ("Psychology as science of selves", Philosophical Review, 1900, 9, 490-501). The following 30 years only developed the paradigm within the limits of an integrated vision of psychology, presumably in increasing degrees of complexity and abstraction. To this effect, Mary Calkins's habitual strategy consisted of presenting her own specialized system of self-concept as capable of accommodating theories issuing from persuasions other than her own, and excluding none; she then assimilated into her own system whatever, in the other theory, confirmed the existence of what one could not avoid, in the end, generalizing under the label of "self-concept" (Heidbreder, 1972, p. 57).

## **Data**

The corpus is composed of seven articles written by Mary Calkins between 1900 and 1930. The seven articles, totalling 119 pages, are: "Psychology as science of selves" (Philosophical Review, 1900, **9**, 490-501), "A reconciliation between structural and functional psychology" (Psychological Review, 1906, **13**:2, 61-81), "The truly psychological behaviorism" (Psychological Review, 1921, **28**, 1-18), "McDougall's treatment of experience" (British Journal of Psychology, 1923, **13**, 337-343), "Critical comments on the 'gestalt-theorie'" (Psychological Review, 1926a, **33**, 135-158), "Converging lines in contemporary psychology" (British Journal of Psychology, 1926b, **16**, 171-179), and "The self-psychology of the psychoanalysts" (Psychological Review, 1930, **37**, 277-304), the latter published together with Eleonor Acheson McCulloch Gamble.

The above list results from a selection made in 1972 by Edna Heidbreder (1972) herself in her discussion of Mary Calkins. Heidbreder's is a discussion of the argument according to which Mary Calkins's notion of the self was really a paradigm for psychology. No matter what results from Heidbreder's discussion, the issue is of enough importance to justify ferreting out the psychological history of Mary Calkins.

## **THE PROTAN SYSTEM, INSTRUMENT OF TWO DUTIES**

Changes in the meaning and themes in the Calkins's corpus were assessed with the help of the PROTAN (for PROTOcol ANalyzer) system of computer-aided content analysis (Hogenraad, Daubies & Bestgen, 1991). At this writing, PROTAN is composed of 28 modular programs and operates from two sorts of platforms, mainframe and PC; it is aided by a 282 pages user's French manual (with a succinct English summary). Content analysis with PROTAN involves at least the following three procedural steps, i.e., inputting the text, lemmatizing it, and arranging it into a frequency table. After the text has been entered into its natural sequential order, lemmatization brings down the number of different word entries of some degree. In PROTAN, this pruning is obtained by comparing the text to a list of standard transformations, for example, text entries "eaten", "eats", or "eating-room" being all three reduced to one single entry "eat"

In PROTAN, as in other equivalent products, the dictionary approach basically consists of comparing all the words of the text (divided into several units as found most appropriate) to all the words of a dictionary (itself usually divided into some number of categories). Each time a match is found

between a dictionary word and a text word, the event is recorded in the unit in which it occurred; when all the comparisons have been made, recorded matches are totaled by category.

In the present case, the Calkins corpus was analyzed with Martindale's (1975) "Regressive Imagery Dictionary" (RID) and with the "Dictionary of Affect" elaborated by Whissell, Fournier, Pelland, Weir, and Makarec (1986). In its American-English version, the "Regressive Imagery Dictionary" is composed of 2,484 words and roots divided into 29 categories of primordial thought and 7 categories of conceptual thought<sup>2</sup>. Primordial and conceptual modes of thought (i.e., concrete and abstract thinking) are to be conceived of as corresponding to the appetitive and reasoning part of the human soul, mentioned in Plato's Book Four of *The Republic*. Child-like processes (the appetitive part) and logical processes (the reasoning part) have indeed been recognized by many to be basic ingredients both of the cognitive functioning of the individual (Piaget, 1923; Klinger, 1971, p. 41) and of the social equilibrium of our societies (Fukuyama, 1992). Validation studies of the RID are further expounded in Martindale (1979; 1990) and Hogenraad and Orienne (1986).

In science, more often than not, scientists attempt to explain rationally what emotions have dictated. This contributes to the fiction in the archives that we have referred to earlier. This seems to be a matter worthy of consideration. Whissell's et al. (1986) "Dictionary of affect" was used to this effect; the dictionary is made of the average ratings by judges of 4,000 American-English words on 7-point intensity scales of evaluation and arousal running from 10 (unpleasant or passive) to 70 (pleasant or active).

The other content analytic approach rests upon the postulate that enough information is contained in the relations of contiguity existing between the words of a text to allow in-depth understanding of its core. Contiguity relations are obtained in the following manner. The correlations of each word above a certain frequency level (here frequency 10) with all the others are summed up and exponentiated to the fifth power (Iker's 1974 procedure), the resulting non-significant correlations being set to zero. The sum of significant correlations of each remaining word with the other ones is then arranged in decreasing order. Richly associative words are those with the higher values; 43 such words were retained for further analyses.

#### **CHANGES OF MEANING AND AFFECT IN MARY CALKINS UNDER PRESSURE TOWARDS NOVELTY**

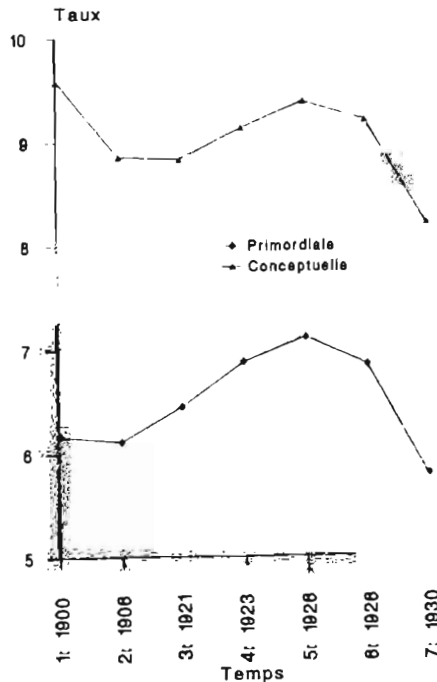
Profiles (curvilinear regression analyses with repeated measures, in Kerlinger & Pedhazur, 1973, pp. 208-221) of the seven Calkins's texts were



obtained through repeated measurements (GLM in SAS Institute Inc., 1989). Thus each article was divided into 15 segments composed of an equal number of words save for the last one to which was added the residue of the division by 15. As a result, the corpus is made up of 105 observations (7 texts of 15 segments each) and 34,657 words, of which 4,123 were different before lemmatization and 2,629 after.

The rate of primordial thinking has a cubic profile as shown in Figure 1 [ $R = .14$ ,  $F_{\text{Cub}}(3, 101) = 5.39$ ,  $p < .01$ ]; symbolic conceptual thinking presents a similar profile [ $R = .14$ ,  $F_{\text{Cub}}(3, 101) = 5.34$ ,  $p < .01$ ] (Figure 1). These two profiles do not seem to unfold in opposition of each other as expected. At any rate, the last manuscript of 1930 is the absolutely lowest in symbolic thinking.

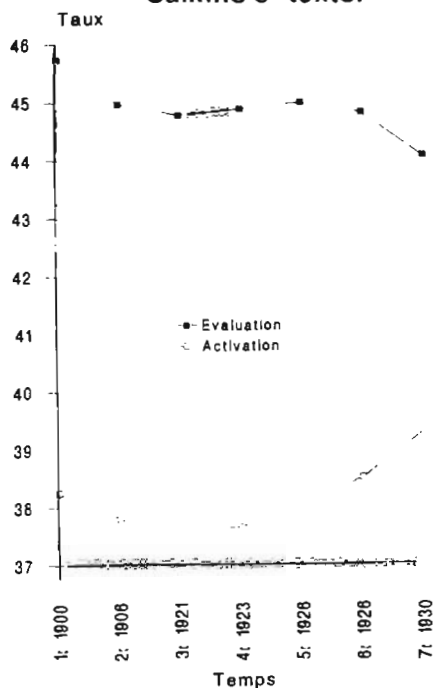
**Figure 1: Predicted profiles of primordial and conceptual thinking in Mary Calkins's texts.**



In the realm of affect, evaluation displays a cubic profile [ $R = .10$ ,  $F_{\text{Cub}}(3, 101) = 3.93$ ,  $p < .01$ ]; arousal displays a quadratic profile, but in the opposite direction [ $R = .12$ ,  $F_{\text{Quad}}(2, 102) = 7.28$ ,  $p < .001$ ] (Figure 2).



Figure 2: Predicted profiles of evaluation and arousal in Mary Calkins's texts.



### THE CLUSTERING OF WORDS THROUGH TIME

The word-word correlation matrix obtained from the frequency matrix of 43 words and 7 observations was analyzed through a correspondence analysis (SAS Institute Inc., 1989). It has not been possible to represent, in Figure 3, all the correspondences between texts (numbered from 01 to 07) and the 43 richly associative words. Dimension 1 palpably pits the personal realm (psychology as science of the self-concept) against the impersonal one (the psychology then received as granted); dimension 2 seems to oppose the realm of unconscious processes (psychoanalysis) to that of conscious processes (learning and self-concept). The lower left quadrangle taps in particular text 07 and various terms with a psychoanalytic connotation. In addition to those already present in this quadrangle, one finds such words as: Adler, Jung, disharmony, dissociated, energy, literal, psychoanalyst, psychoanalytic, recall, repression, wish, et yearn. The lower right quadrangle shows a correspondence between text 06 and terms from the learning area. Thus, in addition to the words already in this quadrangle, one finds: Koffka, configuration, configure, figure, gestalt-psychology, gestalt-psychologist, gestalt-theory, wholes, but also Stern, and personalist) The upper right

quadrangle concerns terms and texts with direct reference to Calkins's philosophy of the self-concept. One will notice that the psychoanalytic theme (lower left) is represented by 20 words, and the learning theme (lower right) by 17 others; in contrast, the self-concept area is indexed by only 6 words present in 4 texts. Characteristically, these 6 are high-frequency ones: "history" (frequency 15), "class" (24), "science" (78), "subjective" (12), "affective" (12), and "cause" (19).

Figure 3: Correspondence analysis between the 7 Calkins's texts and 43 richly associative words.

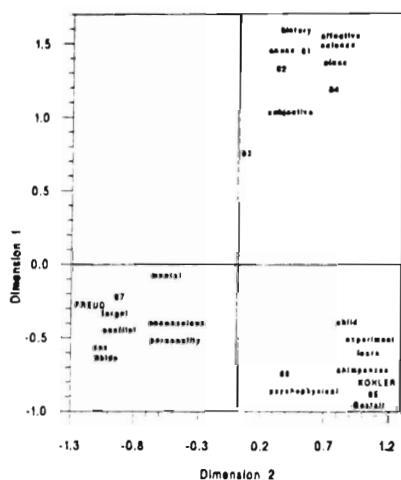


Figure 3.

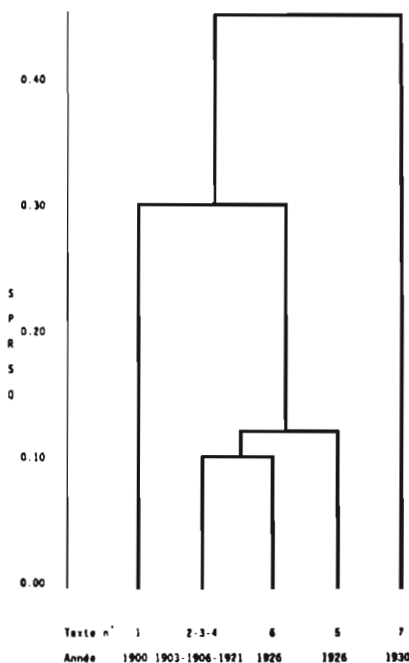


Figure 4.

Figure 4: Hierarchical organization of the 7 Calkins's texts with respect to their distances to 43 richly associative reference words.

The way the seven texts cluster together (Figure 4) illuminates the unique position of the "founding" article 01 in regard to the other six in which Mary Calkins expounded and consolidated her point of view. Also, from the examination of text 07 (written in 1930 with E. A. Gamble), it does not seem that the psychoanalytic model could be assimilated as easily into her general model as the other concurrent models of her time, at least if the position of that text as detached from the rest means anything at all.

## **DISCUSSION: THE FAILURE OF MARY CALKINS'S GRAND THEORY**

Few will quarrel with Heidebreder's assertion that "the development of self-psychology resembles the development of an accepted paradigm as Kuhn describes it" (1972, p. 59). Given the context in which self-psychology developed, this seems indeed an understatement. For the self-psychology of Mary Calkins came within an inch of being recognized and accepted as a new paradigm for psychology. In the end, it failed. One may speculate on the reasons for that failure.

In science, new paradigms are fostered by two complementary types of environment, social and cognitive, i.e., supportive social networks (McCann, 1978, p. 37) and a high level of theoretical integration at the start. Mary Calkins did not seem to have the benefit of the first (Viney, 1969, p. 355), and each of the seven articles analyzed was also meant as an answer to the criticisms that were levelled at some points of her self-psychology. As to the second, whatever the degree of integration of her system of psychology, Mary Calkins chose the strategy of keeping her system wide open so as to make it possible to assimilate into it principles from other mainstream persuasions of her time, introspectionism, Gestalt-psychology, behaviorism, psychoanalysis, and learning theory<sup>3</sup>. Instead of making her system "waterproof" (Fisher, 1992, p. 61) by protective strategies, Calkins's open strategy caused it to collapse and prompted bitterness in herself (if the meaning of the drop in pleasantness in Figure 2 can be understood in this sense). However, between the history of psychology as myth-making process which we have been accustomed to, and this history of psychology that stems from its textual status, there are two major differences. The first is that this textual status turns psychology as literature into data from which predictions can be made. The second is that such data are further capable of bringing history as legend to account. In the present case, we see what constitutes the substance of the failure of Calkins's paradigm, i.e., that instead of the normal accretions of abstractions (conceptual thinking) expected from a new paradigm, degeneration of the existing one occurred (Figure 1).

Table 1: Some thematic patterns in Mary Calkins's texts

	Text
HISTOR. (SELF SELVES) /	
... <u>history</u> differs from the study of <u>selves</u> ...	01
SCIEN. (SELF SELVES) /	
... <u>science</u> of <u>selves</u> ...	01
... <u>science</u> of conscious <u>selves</u> ...	01
... <u>sciences</u> . Such a study of the relation of ... <u>selves</u> ...	01
... <u>selves</u> also may be treated as facts for <u>science</u> ...	01
... <u>scientific</u> study of <u>selves</u> ...	01
... <u>scientific</u> treatment of <u>selves</u> ...	01
... <u>selves</u> must be possible, for <u>science</u> ...	01
... <u>science</u> . Chronologically preceding the distinction of <u>selves</u> ...	01
... <u>scientific</u> study of <u>selves</u> ...	01
... <u>selves</u> , is fairly opposed to the physical <u>sciences</u> ...	01
... <u>science</u> : (1) the <u>science</u> of the <u>self</u> ...	01
... <u>science</u> of the <u>self</u> ...	01,
	03, 05
... <u>sciences</u> of facts regarded as independent of    the <u>self</u> ...	01
... <u>selves</u> from metaphysics, and real experience from the <u>scientific</u> ...	01
... <u>selves</u> , but admitted by both as <u>science</u> ...	01
... <u>selves</u> , and goes beyond the physical <u>sciences</u>	01
...	
... <u>selves</u> , <u>scientifically</u> ...	01
... <u>science</u> of conscious and related <u>selves</u> ...	02
... <u>science</u> of structurally analyzable yet socially related <u>selves</u> ...	02
... <u>self-psychology</u> accomplishes for our <u>science</u>	02
...	
... <u>science</u> as a study of conscious <u>self</u> ...	03
... <u>self</u> , but to show that <u>self-psychology</u> is the <u>science</u> ...	03
... <u>self-psychology</u> is the <u>science</u> ...	03
HISTOR. SCIEN. /	
... <u>science</u> exclusively, and designates as "history" ...	01
... <u>science</u> of "general facts", and <u>history</u> ...	01

... <u>history</u> , therefore, is not a simple <u>science</u>	01
...	
... <u>science</u> is " <u>history</u> ...	01

As a final touch, it is tempting to try ferreting out what in the end caused trouble in Calkins's system. The hint comes from the significance, in Figure 3, of dimension 1. What differentiates the top from the bottom of Figure 3 is an apparent opposition between a psychology of the "here and now" (psychoanalysis and learning theories) and a psychology "historically situated" (Cushman, 1990). Table 1 reports all the passages, from Calkins's seven articles, in which the words "history", "science", and "self-concept" were found together, two by two, within 10 words or less from each other. The table shows that history, science, and self-concept were conceptually connected in Calkins's system of psychology. Hers was a fresh observation of ordinary experience, but for mainstream psychology, its time had not yet come.

Archive analysis is almost everything that traditional history is not. In particular, it is not in the service of winners, who want to write history, nor in that of losers, who might be tempted to rewrite it. No matter how many arguments are put forth, the importance of the basic issue is established. For the soundest of all reasons in favor of archives analysis lies in the possibility that it can rehabilitate the notion of a science anchored in history, perhaps not a history of hosannas, but a history of texts.

## REFERENCES

- Aragon, L. (1928): Traité du style [Treatise on style]. Paris: Gallimard.
- Borgman, C. L. (1989): Bibliometrics and scholarly communication. Editor's introduction. Communication Research, 16, 583-599. [Special issue: Bibliometrics and scholarly communication]
- Calkins, M. W. (1900): Psychology as science of selves. Philosophical Review, 9, 490-501.
- Calkins, M. W. (1906): A reconciliation between structural and functional psychology. Psychological Review, 13, 61-81.
- Calkins, M. W. (1921): The truly psychological behaviorism. Psychological Review, 1921, 28, 1-18.
- Calkins, M. W. (1923): McDougall's treatment of experience. British Journal of Psychology, 37, 337-343.
- Calkins, M. W. (1926): Critical comments on the 'Gestalt-theorie'. Psychological Review, 33, 135-158.
- Calkins, M. W. (1926): Converging lines in contemporary psychology. British Journal of Psychology, 16, 171-179.

- Calkins, M. W. & Gamble, E. A. McC. (1930) The self-psychology of the psychoanalysts. Psychological Review, 37, 277-304.
- Calkins, M. W. (1961): Mary Whiton Calkins. In C. Murchison (Ed.): A history of psychology in autobiography Vol.1. New York: Russell & Russell, 31-62. [Original work published 1930]
- Collinson, P. (1992): Elton at seventy. London Review of Books, 11 June, 24-25.
- Cushman, P. (1990): Why the self is empty: Toward a historically situated psychology. American Psychologist, 45, 599-611.
- Deese, J. (1985): American freedom and the social sciences. New York: Columbia University Press.
- Elton, G. R. (1991): Return to essentials: Some reflections on the present state of historical study. Cambridge:
- Fisher, K. (1992): The social and cognitive dynamics of paradigmatic change: A scientometric approach. Science in Context, 5, 51-96.
- Fukuyama, F. (1992): The end of history and the last man. London: Hamish Hamilton.
- Furumoto, L. (1979): Mary Whiton Calkins (1863-1930): Fourteenth President of the American Psychological Association. Journal of the History of the Behavioral Sciences, 15, 346-356.
- Furumoto, L. (1989): The new history of psychology. In I. S. Cohen (Ed.): The G. Stanley Hall Lecture Series Vol. 9. Washington, DC: American Psychological Association, 5-34.
- Furumoto, L. & Scarborough, E. (1986): Placing women in the history of psychology: The first American women psychologists. American Psychologist, 41, 35-42.
- Gergen, K. J. (1973): Social psychology as history. Journal of Personality and Social Psychology, 26, 309-320.
- Gholson, B., Shadish, W. R. Jr., Neimeyer, R. A., & Houts, A. C. (1989): Psychology of science: Contributions to metascience. Cambridge, MA: Cambridge University Press.
- Habermas, J. (1987): Logique des sciences sociales [The logic of social science] (M. B. de Launay, Trans.). Paris: Payot. [Original work published 1966]
- Hayes, D. P. (1992): The growing inaccessibility of science. Nature, 356, 739-740.
- Heibredner, E. (1972): Mary Whiton Calkins: A discussion. Journal of the History of the Behavioral Sciences, 8, 56-68.
- Hogenraad, R., Bestgen, Y. & Durieux, J.-F. (In press): Psychology as literature. Genetic, Social, and General Psychology Monographs.
- Hogenraad, R., Daubles, C. & Bestgen, Y. (1991): Une théorie et une méthode générale d'analyse du contenu assistée par ordinateur. Le système PROTAN (PROTocol ANalyzer). Version: du 29

- novembre 1991. Unpublished document, Department of Psychology, Catholic University of Louvain, Louvain-la-Neuve, Belgium, ix + 282 pages.
- Hogenraad, R., & Orianne, E. (1986): Imagery, regressive thinking, and verbal performance in internal monologue. Imagination, Cognition, and Personality, 5, 127-145.
- Iker, H. P. (1974): SELECT: A computer program to identify associationally rich words for content analysis. I. Statistical results. Computers and the Humanities, 9, 3-12.
- Kerlinger, F. N. & Pedhazur, E. J. (1973): Multiple regression in behavioral research. Holt, Rinehart and Winston, Inc.
- Klinger, E. (1971): Structure and functions of fantasy. New York: Wiley.
- Korn, J. H., Davis, R., & Davis, S. F. (1991): Historians' and chairpersons' judgments of eminence among psychologists. American Psychologist, 46, 789-792.
- Leahy, T. H. (1987): A history of psychology. Main currents in psychological thought. Englewoods Cliffs, NJ: Prentice-Hall.
- Leahy, T. H. (1992): The mythical revolutions of American psychology. American Psychologist, 47, 308-318.
- Madigan, S. & O'Hara, R. (1992): Short-term memory at the turn of the century: Mary Whiton Calkins's memory research. American Psychologist, 47, 170-174.
- Martindale, C. (1975): Romantic progression: The psychology of literary history. Washington, DC: Hemisphere.
- Martindale, C. (1979): The night journey: Trends in the content of narratives symbolizing alterations of consciousness. Journal of Altered States of Consciousness, 4, 321-343.
- Martindale, C. (1990): The clockwork muse: The predictability of artistic change. New York: Basic Books.
- McCann, H. G. (1978): Chemistry transformed: The paradigmatic shift from phlogiston to oxygen. Norwood, NJ: Ablex Publishing Corporation.
- Newman, J. H. Cardinal (1959): The idea of a university. New York: Image Books. [Original work published in part in 1853 and in part in 1858]
- Otte, M. (1992): Style as a historical category. Science in Context, 1991, 4, 233-264.
- Pelikan, J. (1992): The idea of the university. A reexamination. New Haven: Yale University Press.
- Piaget, J. (1923): La pensée symbolique et la pensée de l'enfant [Symbolic thinking and child's thinking]. Archives de Psychologie, 18, 273-304.
- Rorty, R. (1979): Philosophy and the mirror of nature. Princeton: Princeton University Press.



- SAS Institute Inc. (1989): SAS User's Guide: Statistics, 1989 Edition. Cary, NC: SAS Institute Inc.
- Simonton, D. K. (1992): Leaders of American psychology, 1879-1967: Career development, creative output, and professional achievement. Journal of Personality and Social Psychology, 62, 5-17.
- Staats, A. W. (1991): Unified positivism and unification psychology: Fad or new field? American Psychologist, 46, 899-912.
- Stevens, S. S. (1939): Psychology and the science of science. Psychological Bulletin, 36, 221-263.
- Titchener, E. B. (1911): A note on the consciousness of self. American Journal of Psychology, 22, 540-552.
- Turing, A. M. (1950): Computing machinery and intelligence. Mind, 59, 433-460.
- Viney, L. (1969): Self: The history of a concept. Journal of the History of the Behavioral Sciences, 5, 349-359
- Watson, R. I. Sr.(1979): The history of psychology conceived as social psychology of the past. Journal of the History of the Behavioral Sciences, 15, 103-114.
- Whissell, C., Fournier, M., Pelland, R., Weir, D. and Makarec, K. (1986): A dictionary of affect in language: IV. Reliability, validity, and applications. Perceptual and Motor Skills, 62, 875-888.

### Author's note

This work benefited from the help of the Belgian National Fund for Scientific Research. It was presented at the colloquium on "The Self-concept" organized within and at the invitation of the 60th Congress of the "Association Canadienne-Française pour l'Avancement des Sciences" (ACFAS) held at the University of Montréal, May 11-15, 1992.

I would like to thank Edmond Legros et Bernard Masuy, from the "Belgian Archives for Social Sciences" of the Catholic University of Louvain at Louvain-la-Neuve, for their assistance in interpreting the results of the correspondence analysis. The data were collected by Catherine De Giorgio, Laure-Anne Petre, Steve Rocher, Pascale Steyns, Bénédicte Van Bellinghen, et Pierre Vanhaegenborgh as part of exercises in content analysis within the M. A. program of the Psychology Department of the Catholic University of Louvain at Louvain-la-Neuve, Belgium.

Reprint requests should be addressed to Robert Hogenraad, Psychology Department, Catholic University of Louvain, 20 Voie du Roman Pays, B-1348 Louvain-la-Neuve (Belgium). [e-mail(EARN): WORDS@BUCLLN11].

---

<sup>1</sup> Beneath the technicalities of content analysis, in this strategy or that, lies the idea that content analysis, certainly when it applies to the heavily textual world of science, can do without a theory of language. This is so

---

because, at the very center of things, it is style, much more than language, that is apter to express the nature of science (see Rorty, 1979; note also the "*Traité du Style*" [Treatise on style] of 1928 by the French poet Aragon). Indeed, by homing in on style, one shies away from or even does away with the question of truth (Otte, 1991, p. 236). For good measure in this regard, let us add that any attempt to debase content analysis to the status of a mere technique for analyzing texts is missing the point, for that says next to nothing of it.

<sup>2</sup> The category of primordial thinking (1,815 words and roots) of the RID is further subdivided into 3 sub-categories of drives (oral, anal, and sexual), 9 of sensations (general, touch, taste, odor, sound, vision, coolness, hardness, and softness), 5 of defensive symbolization (passivity, voyage, non-oriented movement, diffusion, and chaos), 6 of regressive knowledge (the unknown, timelessness, alterations of consciousness, brink and passage, narcissism [body parts], and concreteness [spatial references]), and 6 of Icarian imagery (ascent, height, descent, depth, fire, and water). Conceptual thinking (669 words and roots) splits into abstract thinking, social behavior, instrumental behavior, law and restriction, order, temporal references, and moral imperatives.

<sup>3</sup> Also, she limited herself to purely speculative, or at least, theoretical discussions. We have it from Viney (1969, p. 356) that the first empirical test of the self-psychology was undertaken by Titchener (1911).