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Word Association and Communality of Thought

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The word association task has been a standard form of assessment and research tool for over a century, used for investigating how concepts are associated with each other and how they are linked to words. In the 1950s, researchers at the Loyola University, Chicago altered the original free word association test instructions in a fundamental way. They asked participants to provide the word that they thought most other people would say. The purpose of this new manipulation was to assess peoples' ability to reflect on intrapersonal knowledge. The ideas of Henry Stack Sullivan (1892–1949) and David Rapaport (1911–1960) about the role of interpersonal relations to mental health were used to frame the approach. The concept of "communality of thought" represents the mental process that was being measured. In the mid-20th century, psychologist Vincent V. Herr, SJ (1905–1971) directed a research project exploring the relation between linguistic, cognitive, and emotional resources by testing people having various age, sociocultural, educational, and personality characteristics. The aim was to assess peoples' degree of empathy to "the unknown other." This approach represented an interesting innovation in psychological assessment. It gained little traction in the field because of a variety of contextual circumstances. The development of this assessment and the theorizing around it is revisited here to consider its significance as a means of addressing research questions in psychology, psychiatry, and linguistics on issues of interest regarding a normative notion of shared social linguistic knowledge.

Keywords: word association, empathy, reflexivity, 20th century psychology, assessment

Asking a person to say the first word they think of in response to a prompt word has been a productive psychological assessment and research technique. Since the late 19th century, these word association tests have been employed in investigations of the mental

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representation of concepts and their associations (Kohs, 1914; Mülberger, 2017). This task has been widely employed as a research tool as it is easy and quick to administer. It has been used for a variety of purposes over the past century and is still frequently used today. For example, word association tests have been used to investigate lexical development in children and in second language learners, and aspects of linguistic processing, representation, and impairments (Fitzpatrick, 2007; Kruse et al., 1987; Meara, 1983; Sandgren et al., 2021).

Early word association researchers recognized the major tendency for people to give similar responses to each other when asked to provide the first word they think of. Credit for efforts to standardize the task and establish norms for the most common responses is usually given to Grace Helen Kent (1875–1973) and Aaron J. Rosanoff (1878–1943; Kent & Rosanoff, 1910). Kent and Rosanoff initially developed their test in the context of psychiatric diagnostics. Their research strategy was based on the idea that the most common manifestation of insanity was a disturbance of the flow of utterance. They argued that this arose from "a derangement of the psychical processes commonly termed association of ideas" (Kent & Rosanoff, 1910, p. 37).

This test was used extensively for various clinical and nonclinical assessment purposes in the first half of the 20th century (Sargent, 1945). In the 1950s, there was growing interest in linguistic theory and performance. Charles E. Osgood (1916–1991), one of the pioneers of research on mediated meaning representation, argued for increased investigation into psycholinguistic issues. He stated, "In terms of its central relevance to general psychological theory and its potential applicability to complex social problems, no other area of experimental psychology so greatly demands attention as language behavior … and in the past has received so little" (Osgood, 1953, p. 727).

At this time, two early career clinical psychologists, Louis B. Snider, SJ (1913–1955) from the Loyola University Chicago and Olaf Johnson (dates unknown) from the Harvard University, collaborated on research to develop a new means of assessing psychiatric behavior. In developing a new diagnostic screening tool, they implemented a significant innovation to the basic Kent and Rosanoff word association test. Snider and Johnson fundamentally changed the task instructions by asking participants to respond with the word that they thought most other people give. The purpose for this change in instructions was to get people think beyond their own life experiences, which were the basis of primary word associations to demonstrate peoples' ability to consciously reflect on their intrapersonal awareness and understanding. Snider and Johnson's approach was theoretically grounded in the ideas of Henry Stack Sullivan (1892–1949) and others in the late 1940s (Bromberg, 1980). Their view was that interpersonal relations form the basis of mental development and mental health. A key element was Sullivan's (1940/1947) concept of "communality of thought."

Initially, Snider and Johnson's research objective was to determine whether this modified word association test could be used to differentiate mentally ill from healthy individuals and plot changes in acute illness. After their initial pilot study, a group of researchers at the Loyola University, Chicago headed by Vincent V. Herr, SJ (1905–1971) continued to explore the properties of this task to investigate the constructs of "reflexivity" and "empathy." The test with these altered word association instructions to provide the word that most other people would say was called the Loyola Language Study. It was copyrighted in 1954 but only resulted in two journal publications (Herr, 1957, 1966) and a handful of citations. However, there was an active program of research on the Loyola Language Study in the Psychology Department in Chicago for over a decade. Over a dozen unpublished Loyola MA dissertations and PhD theses that were conducted under

Herr's supervision investigated various dimensions of the test involving thousands of participants.

In developing this novel test, Herr and his colleagues explored the relationship between cognitive, linguistic, and emotional resources in people with various age, sociocultural, educational, and personality characteristics. The Loyola Language Study test represents an interesting innovation in the history of psychological assessment, which has been overlooked by subsequent researchers. The present investigation considers the development of the Loyola Language Study in the context of U.S. psychological research in the mid-20th century. The original unpublished materials held at the Loyola University, Chicago Special Collections and Archives document the department's intensive pursuit of this research project and have provided the basis for the present investigation (Loyola University Chicago Archives & Special Collections: Vincent V. Herr, S.J., articles, 1905–1971; Biographical file: Vincent V. Herr, S.J.; University Photograph Collection: Vincent V. Herr, S.J.; Office of the President—Annual Reports to the President, 1951–1969). These materials are used to offer a detailed account of attempts to standardize the test, determine relevant participant variables, and explore a variety of different cognitive, emotional, and social factors for an individual's ability to demonstrate their reflexivity and empathy through their knowledge of the communality of thought. This research project fell into obscurity in the late 20th century. It is revisited to consider the value of this methodological manipulation, the theoretical approach, and the researchers' aims to address specific research issues and agendas in psychology and psychiatry.

The Understanding of Word Associations

Philosophers have considered how concepts are related through similarity (synonyms), contrast (antonyms), and contiguity (in space or time) since the time of Aristotle. This issue was part of a larger set of questions about the representation of meaning in the mind. There were continued efforts over the centuries to understand the basic mechanisms of associations in memory as Mülberger (2017) reviews. These were advanced by the writings of philosophers such as John Locke (1632–1704) and David Hartley (1705–1757; Buckingham & Finger, 1997). One premise was that the ideas and concepts, and their lexical representations, are connected to each other and that the strength of those connections reflects the person's past experience. Furthermore, when a concept/word is retrieved, it will also revive those associated with it. This was how knowledge of the world was thought to be represented in memory (Richards, 1992).

The nature of such word associations began to be investigated within an empirical framework in the late 19th century. For example, they were used to explore individual differences (Galton, 1879) and the nature of lexical representations (Cattell et al., 1889). At the same time, word association tasks were deployed to investigate the aspects of abnormal psychology (Murphy 1928). These methods began to be developed more systematically within the domain of clinical testing in the early 20th century. The Kent and Rosanoff (1910) test became one of the most widely used standardized word association tests. This task required participants to provide the first word that comes to mind in response to another word as quickly as possible. For example, the prompt "bread" typically elicits the response "butter," but it would rarely result in the response "forest."

Kent and Rosanoff's (1910) initial study investigated the performance of 247 neuropsychiatric patients. Participants were asked to respond with the first word that came to mind when hearing a word, and their responses were compared to those collected from 1,000 "normal" participants. The stimuli were comprised of 100 neutral nouns, adjectives, and verbs

selected to avoid eliciting emotional responses. The free associations were classified as "common," "doubtful," or "individual" responses. Kent and Rosanoff found that their healthy participants overwhelmingly produced common responses (92%) with very few individual responses (7%) or doubtful responses (1%). While the "insane subjects" still produced a majority of common responses (71%), they produced a significantly large number of individual reactions (27%). Kent and Rosanoff concluded that

> *the one tendency which appears to be almost universal among normal persons is the tendency to give in response to any stimulus word one or another of a small group of common reactions …* this tendency is greatly weakened in some cases of mental disease. (emphasis in original; Kent & Rosanoff, 1910, p. 46)

The applications of the word association task expanded from clinical settings to address broader questions in the early 20th century. Carl Jung (1875–1961; 1910, 1919) and other psychoanalysts adapted it for use as a projective technique (Fierro, 2022). Free association techniques were used to elicit emotional reactions and interpreted to provide insights into peoples' personalities and personal life experiences. Word association continued to be regularly employed to assess psychiatric and psychological questions over the following decades.

Kent (1942) wrote a review of her experience of psychometric testing over her long career at Danvers State Hospital near Boston. She commented that she had rarely used the original form of her own word association task. She had explored various modifications and found that written tests were more effective than oral ones and that individuals responded better to more specific tasks in comparison to the standard open-ended word association instructions. Over subsequent years, she found that "controlled" word association tests were more useful clinically. By this, she was referring to tasks that required responses to stimuli with their opposites, definitions, and part-whole relations. In the ensuing years, psychological testing using word association tests was highly active in the United States (Stacy et al., 2006). Word association research began to be framed in terms of questions pertaining to wider theoretical and applied interests. There was also development of theorizing about the cognitive processes involved in word associations. David Rapaport (1911–1960) and colleagues put forward a framework in which they identified three phases: (a) mind-set phase—anticipation; (b) analytical phase—unconscious analysis of a word in terms of past memories or feelings; and (c) synthetic phase—preconscious determination of one response (Rapaport et al., 1946). This led to the interpretation that the more delayed the free association response is, the more unique or idiosyncratic it will be. The work on the modified task that became the Loyola Language Study test developed in this context.

Development of the Use of Word Associations to Assess Communality of Thought

The Loyola Language Study test was initially developed by Louis B. Snider, a junior member of the Psychology Department at Loyola University, Chicago. It appears from departmental memos that Snider began work on this project in 1952, but his first project report has been lost. It is unclear from the available archival evidence who was the source of the innovation in the test instructions. Internal documents indicate that after Snider completed his PhD at Loyola in 1953, he went to Boston on a clinical psychology postdoctoral training fellowship at the Harvard University. While there, he collaborated with Olof Johnson who was a research psychologist working at the Boston Psychopathic Hospital

(Boston State Hospital). Johnson and Snider's project was under the direction of Chief Psychologist John Arsenian (1918–2007) as part of a large project on mental health and language.

The aim of Snider and Johnson's pilot study was to develop and standardize a short clinical screening test using controlled word associations to aid the diagnosis of schizophrenia and to measure recovery. The underlying assumption of their new test was that the "gravity of disease would be related to the patient's ability to recognize the deviation of his own thoughts from the thought of the majority of people" (Snider, 1954, p. 1). Snider's (1954) departmental report states that this hypothesis was derived from Sullivan's theory that psychiatric states arose from impaired interpersonal processes and the aim was to explore his idea of "consensual validation." Sullivan (1940/1947) had argued that this interpersonal agreement allowed successful communication of meaning through inferences about the action and thought of the other. The highest mode of thought in his scheme was the "syntaxic mode" which was logical, grounded in reality, and expressed in a commonly accepted language (American Psychological Association, n.d.). In writing about how this mode was impaired in mental illness, Sullivan (1940/1947) stated, "Dementia praecox, schizophrenia, neurasthenia—these things are the privilege of the person who has them, in blissful separation from any suggestion of the social communality" (p. 37).

Snider and Johnson's objective in modifying the instructions for the word association test was to assess an individual's degree of "communality of thought" in two ways: first by measuring people's ability to give associations shared by the majority of the population and second by measuring the individual's awareness of that communal element and their own conformity or deviation from normal thought. Snider (1954) argued,

> Thus, it appears that a much larger segment of personality is involved in this approach than in the traditional free association response to stimulus words. Past experiences, reasoned evaluations, deliberation, choice and other factors of ego control are called upon in responding to word stimuli in the fashion demanded by the Loyola Language Study. (p. 2)

Snider and Johnson's pilot study collected single written responses to 80 written stimuli presented on a single sheet that had been selected from the original 100 words in the Kent-Rosanoff list. Before they began the test, participants were given a clear example to demonstrate what kind of response was being elicited:

> What word would most people be most likely to think of when they hear or see the word FIRE? Many people would probably think of words like WATER or HOT or STOVE or BURN. The word FIRE would probably not make many people think of words like FLOWER, or FISH or BICYCLE. (Unpublished test booklet, 1953)

Participants were required to supply only one word as a response to each written stimulus word. The distinctive instructions were reiterated "Remember, you are not asked to write down the first word that comes to your mind when you look at these words below. You should write down the word which you believe most people would be reminded of" (Unpublished test booklet, 1953).

Snider and Johnson standardized the test on a random sample of 400 healthy men and 400 healthy women from the Metropolitan Boston area with stratification based on age, sex, and education. Information was also collected on the language spoken in the country of the participants' parents (English or non-English) as a proxy for "ethnic background," but this variable was not analyzed. The test was then given to 78 female patients with neuropsychiatric disorders. When the neuropsychiatric participants' responses were compared

to the norms, it was found that 76% of the patients fell below the 10th percentile of scores. They found a significant difference ($p > .001$) between the patient and control group responses using composite z scores (Snider, 1954). Snider and Johnson's study was highlighted in the annual report of the Boston State Hospital (1955). Their pilot test was reported to demonstrate clear differences between mentally ill and healthy individuals and was recommended for its potential as a mass psychiatric screening device. The report also noted that Snider had now returned to Loyola but that work on this test would be continued jointly by Johnson in Boston and Snider in Chicago.

The collaborators corresponded to each other, discussing how best to analyze their results and considering their next steps in developing the project. Johnson speculated that the outpatients with less severe mental health issues might show a difference between the scores on their controlled word association test and the Stanford-Binet Intelligence Scale (Terman & Merrill, 1937), while those suffering from schizophrenia would have poor performance on both tasks (Johnson to Snider, September 30, 1954). Johnson suggested that this "verbal factor" might be of additional diagnostic value. He also raised the question of how the test performance of healthy controls might be correlated with other measures such as education, vocabulary, and intelligence.

Snider's work on the project continued at Loyola in 1954–1955 with the help of several graduate research assistants. He revised the test, and it was copyrighted by Loyola in 1954 (Figures 1 and 2). However, in April 1955, Johnson was promoted to Head Psychologist at the Briggs Clinic in Boston. When Johnson was offered this new role, he turned the project over to Snider to continue alone. Meanwhile, Snider had learned that he was gravely ill. At this point, he gave all the pilot materials to Herr, who was Head of the Loyola Psychology Department. Snider expressed the hope that the research should continue. Snider died in September 1955 from lung cancer (Louis Bernard Snider Obituary, 1955). The positive outcome of Snider and Johnson's pilot study on differentiating mental illness using a test of communality of thought was never published.

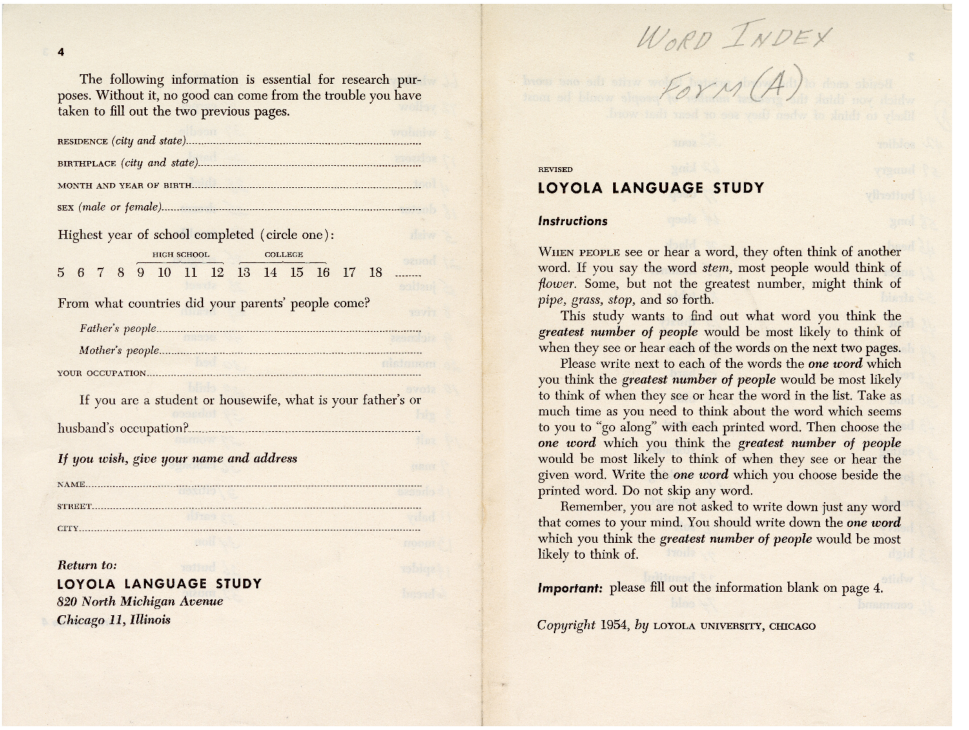
In an interoffice communication written November 21, 1955, Herr informed his colleagues of his plans for continuing the Loyola Language Study project. Herr obtained funding to extend this work from the State of Illinois Psychiatric Authority. One of his first concerns was to determine the degree of agreement among control participants for each of the 80 stimulus words so that norms could be established for test responses. At this point, Herr hired four graduate students to collect additional data and develop further analytical procedures for the test instrument. Loyola psychology faculty members Charles I. Doyle, SJ (1889–1973) and Frank J. Kobler (1915–2005) were also involved in directing graduate student projects on the Loyola Language Study.

Widening the Scope of Applications for the Communality of Thought Task

The expanded vision for the Loyola Language Study under Herr's direction reflects his central involvement in intersecting national trends of interest and activity in the mid-20th century that focused on the relation between psychology and religious belief. There was a national drive to improve mental health treatment in the United States directly after WWII. The National Mental Health Act of 1946 provided federal government research funding into the causes and treatment of mental illness and for the training of professionals in mental health treatment. It also established the National Institute of Mental Health (NIMH). The Mental Health Study Act of 1955 established a Joint Commission on Mental Illness and Health whose remit was to develop a research strategy for mental illness diagnosis, treatment, and care and to recruit and train mental health personnel.

Figure 1

Loyola Language Study Test Booklet Pages 1 and 4



4

The following information is essential for research purposes. Without it, no good can come from the trouble you have taken to fill out the two previous pages.

RESIDENCE *(city and state)*.....

BIRTHPLACE *(city and state)*.....

MONTH AND YEAR OF BIRTH.....

SEX *(male or female)*.....

Highest year of school completed (circle one):

HIGH SCHOOL COLLEGE

5 6 7 8 9 10 11 12 13 14 15 16 17 18 .....

From what countries did your parents' people come?

Father's people.....

Mother's people.....

YOUR OCCUPATION.....

If you are a student or housewife, what is your father's or husband's occupation?.....

If you wish, give your name and address

NAME.....

STREET.....

CITY.....

Return to:
LOYOLA LANGUAGE STUDY
820 North Michigan Avenue
Chicago 11, Illinois

WORD INDEX
FORM (A)

REVISED

LOYOLA LANGUAGE STUDY

Instructions

WHEN PEOPLE see or hear a word, they often think of another word. If you say the word *stem*, most people would think of *flower*. Some, but not the greatest number, might think of *pipe*, *grass*, *stop*, and so forth.

This study wants to find out what word you think the ***greatest number of people*** would be most likely to think of when they see or hear each of the words on the next two pages.

Please write next to each of the words the ***one word*** which you think the ***greatest number of people*** would be most likely to think of when they see or hear the word in the list. Take as much time as you need to think about the word which seems to you to "go along" with each printed word. Then choose the ***one word*** which you think the ***greatest number of people*** would be most likely to think of when they see or hear the given word. Write the ***one word*** which you choose beside the printed word. Do not skip any word.

Remember, you are not asked to write down just any word that comes to your mind. You should write down the ***one word*** which you think the ***greatest number of people*** would be most likely to think of.

Important: please fill out the information blank on page 4.

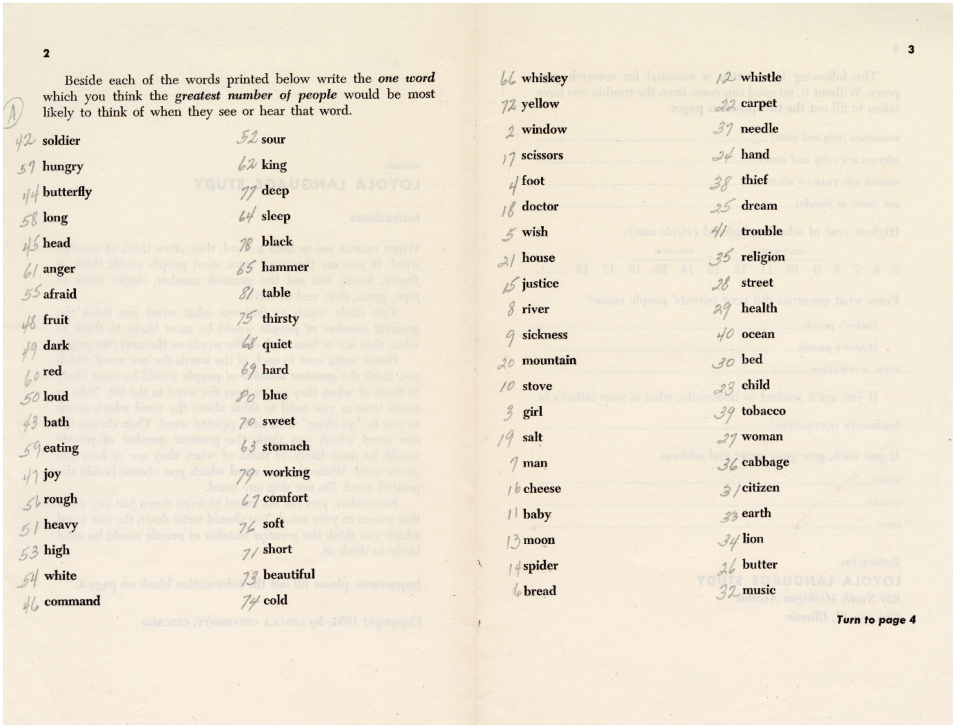
Copyright 1954, *by* LOYOLA UNIVERSITY, CHICAGO

Note. Loyola Language Study instructions and participant information. Test booklet with marginalia. From Vincent V. Herr, S.J., papers Box 8 Folder 16—Loyola Language Study test booklet. Loyola University Chicago Archives & Special Collections. Reproduced with permission from Loyola University Chicago Archives & Special Collections. See the online article for the color version of this figure.

At the same time, there were efforts to reconcile long-standing opposition to psychiatry by the religious faith communities. This had developed in reaction to the psychoanalytic approach, which was in ascendance in the first half of the 20th century. The Catholic Church was prominent in offering a more nuanced view of this conjunction, sanctioning a more medicalized approach to mental illness (Kugelmann, 2011). Herr's commitment to this effort is reflected in the fact that he preserved several significant documents from this period in his articles. These include Pope Pius XII's important address in 1952: "The Moral Limits of Medical Research and Treatment" to the First International Congress on the Histopathology of the Nervous System, and his lecture the following year "On Psychotherapy and Religion" (Pope Pius XII, 1952, 1953). Meanwhile, the leaders of the American Psychiatry Association also called for rapprochement between psychiatry and religion (Anderson, 1954; Gayle, 1956).

The specific local context for this work on psychology and religion also needs to be appreciated. Founded in 1870, Loyola is a Catholic institution which demonstrated a commitment to the scientific approach to the discipline of psychology from relatively early on. The teaching of "Rational Psychology" was a metaphysical approach common in many faith-based universities including Loyola. However, in the 1920s and 1930s, Loyola expanded its offerings in Experimental Psychology and developed dedicated lab

Figure 2
Loyola Language Study Test Booklet Pages 2 and 3



2

Beside each of the words printed below write the ***one word*** which you think the ***greatest number of people*** would be most likely to think of when they see or hear that word.

(A)

42 soldier
59 hungry
44 butterfly
58 long
45 head
61 anger
55 afraid
48 fruit
49 dark
60 red
50 loud
43 bath
57 eating
47 joy
56 rough
51 heavy
53 high
54 white
46 command

52 sour
62 king
77 deep
64 sleep
78 black
65 hammer
81 table
75 thirsty
68 quiet
69 hard
80 blue
70 sweet
63 stomach
79 working
67 comfort
76 soft
71 short
73 beautiful
74 cold

3

66 whiskey
72 yellow
2 window
17 scissors
4 foot
18 doctor
5 wish
21 house
15 justice
8 river
9 sickness
20 mountain
10 stove
3 girl
19 salt
7 man
16 cheese
11 baby
13 moon
14 spider
6 bread

12 whistle
22 carpet
37 needle
24 hand
38 thief
25 dream
41 trouble
35 religion
28 street
29 health
40 ocean
30 bed
23 child
39 tobacco
27 woman
36 cabbage
31 citizen
33 earth
34 lion
26 butter
32 music

Turn to page 4

Note. Loyola Language Study stimulus words. Test booklet with marginalia. From Vincent V. Herr, S.J., papers Box 8 Folder 16—Loyola Language Study test booklet. Loyola University Chicago Archives & Special Collections. Reproduced with permission from Loyola University Chicago Archives & Special Collections. See the online article for the color version of this figure.

facilities. These were clear efforts to provide a Catholic orientation to scientific data in psychology. Herr was a fundamental force in fashioning this approach from the 1940s onward, as his teaching files in the archives indicate.

Herr had been appointed to the department in 1939 after completing his postgraduate training in Gestalt Psychology under Karl Bühler (1879–1963) and Charlotte Bühler (1893–1974) in Vienna and a PhD from the University of Bonn (Lorch, 2023). His 1939 PhD was titled "Die isolierende Einstellung bei Kontrast-Erscheinungen: experimentelle Untersuchungen ihrer charakteriologischen Bedeutung" (The Isolating Attitude in Contrast Phenomena: Experimental Investigations of their Characterological Significance). After joining the Loyola faculty, Herr wrote a number of psychology textbooks, including *Psychology, an Integrational Approach* (1943); *General Psychology* (1944a); *Individual Experiments in Psychology* (1944b); and *How We Influence One Another* (1945). These reflect his personal synthesis of rational, social, and experimental psychology in both his theoretical and methodological research and in his teaching. Herr was a leading member of the American Catholic Psychological Association and contributed to their efforts to establish Catholic universities' scientific credentials (Kugelmann, 2000). During his term as the Chair of the Department from 1945 to 1965, Herr introduced a PhD program and developed the departmental specialty offerings in clinical, experimental, and social-industrial psychology. There was huge growth

in the numbers of Loyola psychology MA and PhD students in this period, and Herr served as supervisor for most of them. He was instrumental in developing the clinical training program and obtaining certification by the American Psychological Association. He also expanded collaboration with the Psychiatry Department at Loyola's Strich School of Medicine. In these various ways, Herr was responsible for the department becoming a significant force in the U.S. academic landscape for the field. Herr incorporated the Loyola Language Study word association test into many aspects of the department's undertakings, as well as into his wider activities in local, national, and international academic research and religious networks. Herr's significant efforts in this domain demonstrate a personal intellectual commitment to psychology research grounded in his unique academic background and individual vision.

In 1955, Herr initiated efforts to integrate approaches to scientific psychology and religious belief at Loyola. He was an early responder to one of the first calls for mental health projects from NIMH. His grant application for a pilot study was successful in 1957 (NIMH 6404-01). He then obtained a further NIMH grant for a much larger multicenter study on Religion and Mental Health in collaboration with Harvard and Yeshiva Universities. Running for over a decade, this was a key turning point in establishing his wider research program in the study of language, thought, and empathy. Herr's part in this multifaith project represents the leading edge of national efforts to reconcile scientific psychology and psychiatric research with religious belief (Herr, 1960). One key strand of this Loyola project was to develop ways to identify personal abilities that would make someone suitable for religious life. This involved the mental qualities required for themselves but also for their service to their community. As his project codirector, Herr chose William J. Devlin, SJ (1905–1961), the first ordained Catholic priest in America to become a qualified psychiatrist. Unfortunately, Devlin died in the early stages of this project.

Herr continued to receive NIMH funding, and it was used in part to support his long-term research on the Loyola Language Study. Herr directed over a dozen graduate students and research assistants who collected a series of norms from various age groups and cities throughout the United States. They performed several studies to identify relevant control variables such as sociogeographic location, age, intelligence quotient (IQ), and education. One major objective was to standardize the test and create robust *z*-score tables for the most frequently produced responses. The Loyola Language Study test was deployed to identify people with psychiatric disorders and psychosocial difficulties. In addition, there were studies of how the Loyola Language Study test correlated with other socioperceptual and sociocognitive judgments and emotional characteristics. As such, it fulfilled all three of the objectives of psychological testing that were identified by Mülberger (2017): psychometry, clinical diagnosis, and psychological differentiation.

Initial Investigation of the Communality of Thought

Herr published the first account of the Loyola Language Study test properties in 1957. This included the acknowledgement of his colleagues' and students' contributions to the data collection and analyses. The article reported an expanded data set from Snider and Johnson's pilot. It presented the Loyola Language Study task as a test of whether psychiatric responses could be differentiated from controls on the basis of communality of thought (Herr, 1957). The article also described responses from a group of healthy controls. There was a positive effect of age and level of schooling. Younger and more educated control participants scored significantly higher on the ability to produce high "communality of thought" responses than did the older and less educated ones. However, the measures of intelligence

were found not to correlate with Loyola Language Study test scores. This failed to support Johnson's initial hypothesis. Response frequencies were found to differ significantly in males compared to females on the test, and the responses to specific words that discriminated between the two in the Chicago sample were reported in detail.

This finding of gender differences in standard word associations had been a topic of debate since the late 19th century (Mülberger 2017). Early research with the rapid free word association test had explored whether there were differences found in the responses from men and women. Jastrow (1891) reported such an effect and interpreted this as evidence of a difference in the mental traits of men and women. Mülberger (2017) recounted how this was challenged by early women psychologists at the time who did not find this difference in word association responses. It is notable that this variable was not included in the subsequent analysis of word association responses by Kent and Rosanoff (1910). However, in the 1950s, this question was revisited in a study by Tresselt et al. (1955). They found significant differences in males' and females' responses on the Kent and Rosanoff test for only 5 of the 100 words. While Herr did detail the differences he found on Loyola Language Study test responses with respect to this variable, this was reported without interpretative commentary.

Herr (1957) raised the question of whether word association responses might be conditioned by local and cultural meanings. He noted that the free associative responses in the frequency tables for the Kent-Rosanoff test were largely determined using a restrictive set of participants from the eastern United States. In an attempt to pursue this question, Herr and his colleagues collected test responses from a new set of healthy and mentally ill participants from Chicago as well as Boston. Herr created frequency tables of responses stratified for age and education based on the two cities' census data. However, Herr found no significant differences in responses according to location.

Herr's 1957 publication received some attention from the mainstream psychology community. In an extensive review of contemporary assessment techniques, Loevinger (1959) judged that the Loyola Language Study test showed promise as a new type of projective word association. However, there was limited immediate uptake of Herr's test by other researchers.

Shortly after Herr's publication appeared, another study reported the effects of using similar modified instructions for the standard word association test. James J. Jenkins (1923–2012), who was the cocreator of the widely used *Minnesota Norms for Word Associations* (Russell & Jenkins, 1954), published a study comparing free and "popular" responses (Jenkins, 1959). His study's objective was to investigate whether people who make uncommon free word associations can produce common ones when instructed to. He tested 129 college students, first with the standard word association task, and then with instructions to give the word "most other college students would give." Jenkins found a significant difference between the responses to the standard instructions and the popular response instructions. The popular responses were found to elicit significantly higher common responses for 89/100 stimuli.

It is notable that Jenkins did not cite Herr's publication. In the Herr articles, there is a letter from Jenkins to Herr dated July 8, 1960. It is clearly a reply to Herr, but there is no copy of Herr's earlier letter to Jenkins. Jenkins thanked Herr for his 1957 article and sent his Minnesota norms in return. It is not known whether Herr had pointed out the lack of citation to his work. However, in his letter, Jenkins (1960) wrote, "I believe our work touches on yours at several points, though we are obviously aimed at different goals." It is unclear from the available evidence whether this was an attempt to deflect from the issue of Herr's priority or a genuine acknowledgement of their distinct research goals and theoretical orientations.

Jenkins ended his letter by requesting that Herr send him the Loyola Language Study test norms and scoring keys. It is not known whether Herr followed up this request. However, no citation by Jenkins to the Loyola Language Study has been found in Jenkins's subsequent and prolific word association research publications.

Following on from Jenkins' (1959) study, several other researchers investigated communality of thought in healthy individuals. Two further studies which cited Jenkins but not Herr used modified instructions for eliciting popular word association responses. Horton et al. (1963) conducted a modified replication of Jenkins' (1959) study investigating differences between the standard free association and the popular association response instructions. They also found an increase in commonality scores for the popular instructions compared to free word associations. Interestingly, Horton and colleagues also tested whether "social sensitivity" was correlated with increased commonality scores for the popular instructions. Contrary to the hypothesis proposed by Jenkins (1959), social sensitivity as measured by the "need for approval" was only found to be related to increased commonality for the standard instructions under the relaxed time condition but not for the popular instruction responses. A third study by Van Der Made-Van Bekkum and Van Der Kam (1966) conducted a follow-up study based on the findings of Jenkins and Horton tested participants on the difference between standard and popular response instructions. They investigated whether the order of presentation of the two types of instructions had an effect using a smaller set of 48 stimuli with 102 young adolescents. Van Der Made-Van Bekkum and Van Der Kam (1966) found an increase in common responses under the popular response instructions replicating the earlier studies but found little order effect.

In contrast to the research that was motivated by Jenkin's (1959) publication, only one study has been located that refers explicitly to the method described in Herr (1957) for measuring communality of thought. Wynne (1963) used selected items from the Loyola Language Study test as one of the eight tests in an investigation to differentiate psychiatric patients by length of hospital stay. Using the "most people" word association instructions, he found that short-term stay patients (i.e., with less severe psychiatric illness) had higher communality of thought than long-term stay patients as indicated by a significantly lower z-score on the discriminative items from Herr (1957). Short-term stay patients were also found to give significantly fewer unusual responses than those hospitalized for longer. Both groups of patients produced a significantly smaller number of primary responses on the selected items of the Loyola Language Study test when compared to free association test responses. This last finding may corroborate the earlier evidence that the Loyola Language Study test is a more sensitive measure of psychiatric illness.

Wynne et al. (1967) continued to explore the difference between the two sets of instructions in healthy participants. However, only Jenkins's 1959 article is cited in their later article. While Wynne (1963) had referenced Herr's Loyola Language Study (1957), it was omitted in his subsequent publication. This may be an instance where the status of the author, affiliation, and other personal characteristics have biasing effects on citation choices (Ray et al., 2024). Jenkins was a prominent and powerful figure leading the new cognitive revolution at this time (Foss & Overmier, 2013). Jenkins' (1959) article was cited by dozens of authors using the popular response instructions, while Herr's (1957) article attracted little notice as measured by number of citations. As Jenkins had pointed out in his letter to Herr mentioned above, their broader research objectives were quite different. Jenkins' psycholinguistic agenda reflected a growing trend in psychological research on word associations in the 1960s. In contrast, Herr's focus on how people perceived and understood themselves in relation to others was a diminishing research theme in mainstream psychology by this time.

Further Investigations of Communality of Thought

Herr's second publication on the Loyola Language Study project (1966) reported a composite of data and findings collected by Herr along with other Loyola faculty and graduate students under Herr's supervision. This article was another effort to standardize his test instrument. It demonstrates Herr's rigor and precision as an experimentalist and reflects his strong belief that the Loyola Language Study test represented a valuable assessment instrument worthy of widespread adoption. In contrast, it is notable that Jenkins did not standardize his popular responses test.

Performance on the Loyola Language Study test was reported from a wider sample of participants, including more diverse healthy adults and school children and those with psychiatric conditions (Herr, 1966). These additional test results were collected from thousands of individuals. In addition, a broader geographic range of participants were sampled from Boston, Chicago, Seattle, Detroit, Cleveland, Cincinnati, and San Francisco. Herr investigated the Loyola Language Study test's validity by determining the degree of overlap between his test and responses from the standard free association task on the same list of words. This correlation was found to be only 0.65. Herr interpreted this as indicating that the two tests measured somewhat different things. He suggested that this reflected participants' belief that their free associations were not always the same as what they thought most others would say. He argued that the instructions for the Loyola Language Study test require participants to find deliberate reasons for choosing one word over another. Furthermore, he suggested that the response selections may reflect individuals' attitudes and perceptions of the free associations themselves. The influence of Sullivan's ideas and Rapaport's model discussed above can be seen in this commentary.

Many of Herr's findings reported in 1957 were replicated in this larger sample collected over the ensuing 9 years. Younger and more highly educated participants were again found to have higher communality of thought scores. However, there was little significant variation found in responses given by participants from different cities, contrary to his expectation. Participant variables of occupation and IQ were also not significant. Robust differences between men's and women's responses continued to be found in this larger and more diverse sample on the Loyola Language Study test. Female participants showed higher ability to respond with what others would say than males, but the two groups also produced different common responses. As was typical of publications from this period, Herr focused on reporting the statistical analysis of results, with little space devoted to the interpretation of results through any explicit theoretical lens. He provided no commentary on this difference between male and female responses. It is unclear whether he viewed this as a difference in sociocultural gender roles or as a result of physiological differences in cognition. No indication that he held sexist views has been found in his personal papers. On the contrary, there is evidence from the archive that Herr supported his male and female staff and students equally and that the numbers of both in the department were evenly balanced during his chairmanship.

In this later work, Herr (1966) also explored the relation between the Loyola Language Study test and other social psychological dimensions. Measures of social values, personal interests, and levels of empathy and anxiety were all discriminated by the ability to give responses that reflected communality of thought. These findings were further nuanced by the lack of correlation found between communality of thought and commonality of social perception judgments. Herr argued that social sensitivity judgments about the "generalized other" varied by task. While social perception judgments can be founded on observational experiences. Herr pointed out that responses on the Loyola Language Study test are not based on direct observation of others or feelings toward the "generalized other."

In her synthetic review of word association research in 1968, Phebe Cramer (1935–2021) discussed the modified instructions to give the response most others would (Cramer, 1968). In this passage, she highlighted the work of Jenkins, Horton, and Wynn and their colleagues discussed above, but not Herr. This is notable since she cited Herr's work at numerous other points throughout the book. Moreover, she attributed to Herr (1957) the finding that the ability to give the response most others would give correlates significantly to age and education level and is unrelated to IQ. She also credited Herr for his determination of the difference between schizophrenic and "normal" individuals' ability to provide responses with high communality of thought.

A handful of studies by other researchers did directly cite Herr's second publication on the Loyola Language Study. The most distinctive of these used the instructions to give word associations that most others would give to investigate the hemispheric lateralization of verbal skills. Lansdell (1973) tested patients before and after neurosurgical removal of the left or right temporal or thalamic portions of the brain. Although he cited Herr's publication, Lansdell chose to create his own task rather than use the Loyola Language Study test. He reported significant differences for site and side of lesion but only in the male patients. The interpretation he offered was limited and vague: "Some unknown aspect of the specialized functioning of the left hemisphere of the male brain incurs the disadvantage of greater effects from subcortical damage with regard to this ability to appreciate how others associate words" (Lansdell, 1973, p. 257).

Shifting Word Association Research Agendas

While the Loyola Language Study attracted few citations, there was a vast amount of research into word association test variables, including the manipulation of instructions to investigate whether individuals could produce associations that they thought most others would have produced. The notable thing about this body of research is that it was not underpinned by the same theoretical foundation as that which motivated Snider and Herr as discussed above. The focus of research by Jenkins and other mainstream psychologists at this time was shifting away from the issues that provided the impetus for Herr's research. This was reflected in the increased use of verbal learning experiments as measures of association strength. Such research focused on measures of reaction time, ease of learning, retention, and recall and were employed in classical conditioning experiments. At the same time, the developmental perspective was also a prominent element of word association research. This reflected the influence of the approach of Jean Piaget (1896–1980; 1930, 1950) and others.

In this new research landscape from the 1960s onward, there was interest in association responses with the popular instructions, and Jenkins (1959) was often cited. For example, Neman and Dixon (1969) replicated the finding of differences between responses given under the free, rapid elicitation procedure and under the deliberated popular response instructions in healthy individuals. Research into idiosyncratic word association in individuals suffering from psychiatric disorders also continued to be a very active area of research. For example, Merten (1993) used three types of elicitation of word associations in healthy and psychotic individuals: free association, most common response, and least common response. The source of the manipulation of most common response elicitation was not given any citation. This represents an instance where a later researcher presents a new research manipulation that had been tried previously by others. It is notable that Merten did not provide any theoretical foundation for the investigation of the ability to produce commonality of response as a modulating variable.

Consideration of the Nature of Free Word Association Responses and Communality of Thought

In the earliest work on word associations, Galton (1879) suggested that many arose from early life experiences that were personally distinct, while at the same time, having their source in wider shared social knowledge. The Loyola Language Study was an attempt to determine both individual and group differences in communality of thought and its relation to other participant variables. The Loyola Language Study did not investigate the nature of word associations in and of themselves. Rather, the test was developed to explore the ability of individuals and groups of individuals to demonstrate an understanding of shared aspects of knowledge of the world. In this sense, it reflected the distinction between verbal habits and thinking. This distinction might now be constructed as a contrast between automatic and controlled processes in cognitive psychology or the System I and System II distinction in judgment and decision making (Kahneman, 2011). While the rapid free word association task was used to explore linguistic mental representations, the Loyola Language Study test was intended to assess the ability to think, deliberate, and reflect on those linguistic mental representations and to make judgments about how individualistic or commonly shared they might be.

In the later 20th century, there were new efforts to employ word associations to understand the nature of the mental lexicon. For example, Moran (1982) studied the consistency of individual free word association responses over time from participants ranging from 3 years to 85 years of age. As a source of inspiration for his research, Moran cited the early work of Henry J. Watt (1879–1925) who was a student trained in the Würzburg School of psychology. It should be recalled that Herr himself was one of the last to be trained in this intellectual tradition in his days as a graduate student in Vienna and Bonn. From his analysis of individual and group responses over time, Moran argued that there were two different sources for word associations: an "idiodynamic semantic set" and a "communal set." He used this distinction to develop a dual component model of the "cognitive dictionary" structure. Moran argued that response patterns involved the interaction between the independent strength of the reproductions as reflected in his Commonality Table probabilities and the subjective operating task imposed by the instructions. Moran argued that studies such as Jenkins' (1959) had demonstrated this second component but did not mention Herr's work.

Final Thoughts on This Dormant Research Instrument

The Loyola Language Study test was a novel task manipulation with the aim of determining an individual's ability to consider the associations of words in their mental lexicon and make judgments about how these might be the same or different from other peoples'. As such, it is a task that is influenced by the ability to inhibit the automatic response (free rapid response) and reflect on the degree to which a person's individual experience of the world, as represented by their association of concepts and words, may be idiosyncratic. It also requires participants to consider what they assume the wider public knows about the world. There were a variety of reasons, considered above, to account for why the Loyola Language Study test was not taken up as a clinical assessment instrument or as a research tool by other psychologists at the time. Other researchers did investigate the ability of participants to give "popular" response word associations sporadically over the second half of the 20th century. However, whether they were aware of Herr's research or not, this assessment technique is not evident in today's research landscape. There is a long history of using controlled word association tasks such as Word Fluency tests as an assessment tool to probe

executive functions (Benton, 1968) and these are still found useful today (Shao et al., 2014). The Loyola Language Study test is a different type of controlled association test. While it also engages attention and conscious selection of possible candidate responses that fit certain criteria, the Loyola Language Study task was devised to tap into an individual's ability to consider the contents of other peoples' mental lexicons and compare that to their own.

There is current research interest in peoples' ability to appreciate what another person knows. A growing body of research has investigated what is now referred to as Theory of Mind since the 1980s. This has been pursued within a developmental framework (Wimmer & Perner, 1983) and has been deployed to identify neurodiversity and disorder in social cognition (Baron-Cohen et al., 1985). However, this research typically focuses on what another individual knows, believes, or feels because of the ability to observe and attend to others. There are also recent efforts to understand the nature of words as social tools (Borghi et al., 2019). As Herr and his colleagues demonstrated, the Loyola Language Study task does not draw on direct observation of others' behavior. Rather, it may reflect a different type of social knowledge in assessing what is typical for other people generally to know about the world at a conceptual level. It was designed to explore aspects of consideration for and appreciation of other people, with the purpose of identifying individuals with difficulties in this aspect of social cognition. One of the aims of the Loyola Language Study was as a means to identify people who have a limited ability to reflect and understand that what they know is not always shared by everyone else and as such are lacking in empathy.

As performance on the Loyola Language Study task assessed an individual's understanding of the wider sociocultural milieu which they share with other people, it could also be seen as an investigation of cultural homogeneity and cross-cultural awareness. Herr had hypothesized that there would be variation in responses because of differences in communality of thought in different parts of the United States. However, he failed to find any significant differences relative to location in his investigations. This may reflect some pervasive cultural norms that were operating at a national level in the 1950s and early 1960s. Alternatively, Herr and his colleagues may have found consistency of responses because they only tested participants in large cosmopolitan cities. It is possible that communality of thought for individuals in small rural areas, living with people who have resided in the same place for many generations, and who have not traveled extensively might show a different pattern of responses to those from people who are surrounded a diversity of people from all over the world or who have lived in other countries. This was an unexplored aspect of tests of communality of thought. It would have had the potential to refine understanding of how knowledge of the world develops from both personal experience and broader sociocultural exposure. Testing of communality of thought could document intergenerational language change and changes in social norms. Interestingly, Jenkins and Russell (1960) did attempt to plot this using the standard word association task.

Herr worked to develop a word association test to address questions about reflexivity and empathy with respect to knowledge of the "generalized other." This psychological assessment technique developed in the context of American psychology in the mid-20th century. Herr was committed to the Loyola Language Study for its potential to investigate the ability of individuals to consider how the contents of their mental lexicon may or may not differ from others. It required little in the way of equipment or time and participants' written responses could be analyzed against standard scores generated from thousands of participants. Many of the variables that were investigated to determine what this test represented have some resonance in current research questions, albeit with different theoretical frames and research objectives.

Conclusion

A group of researchers led by Vincent V. Herr, SJ, investigated communality of thought by measuring peoples' reflexivity and empathy using a word association test with the instructions to provide the response that they thought most others would say. This work on the Loyola Language Study test was conducted in the 1950s and 1960s in the Psychology Department at the Loyola University in Chicago. The project explored peoples' ability to consciously reflect on how their own associations that were based on personal experiences might differ from the "generalized other." These investigations found that younger and more highly educated participants had higher communality of thought scores, while there was little significant variation found in responses given by participants by occupation, IQ, or geographical locality. Men's and women's ability to provide a response that reflected communality of thought, and their actual common responses, were also found to differ.

While the task was demonstrated to reflect something distinct from standard word association tests and was successful in differentiating people suffering from psychiatric illness from healthy individuals, it was not adopted widely as a mainstream psychological assessment. The Loyola Language Study project grew out of Herr's wider research perspective founded in Gestalt Psychology and his motivation to reconcile religious belief with theoretical and empirical psychology. The Loyola Language Study test explored various questions about social cognition as reflected in controlled judgments about the contents of the mental lexicon. In the late 1960s, there was a national shift to other research agendas, that caused this project to lose relevance. There has been sporadic exploration of the ability for communality of thought subsequently, but the full potential of this task was not realized.

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