New Ideas in Psychology 47 (2017) 24–32

Contents lists available at ScienceDirect

New Ideas in Psychology

journal homepage: www.elsevier.com/locate/newideapsych

Historical impact in psychology differs between demographic groups

Christopher D. Green*, Shane M. Martin

York University, Toronto, Canada

ARTICLE INFO

Article history:
Received 18 August 2016
Received in revised form
8 February 2017
Accepted 4 April 2017

Keywords:
History of psychology
Digital history
Eminence
Impact
Internet
Survey

ABSTRACT

Psychology has a long tradition of creating lists of the most eminent members of the discipline. Such lists are typically created under the assumption that there is a general answer to the question of eminence, covering all psychologists everywhere. We wondered, however, to what degree perceived eminence depends on the individual's particular demographic situation. Specifically, are different historical figures "eminent" to people of different genders, ages, and geographical locations? We tested this by asking a wide swath of people – mostly psychologists – who they think has had the most impact on the discipline of psychology, historically. We used an online game in which "players" were shown a series of pairs of significant figures from psychology's past and asked to select which had had the greater impact. We then converted these selections into a ranked list using the Elo rating system. Although our overall rankings had considerable similarity with traditional efforts, we also found that rankings differed markedly among different demographic groups, undermining the assumption of a general measure of eminence that is valid for all.

Fifteen years ago, Haggbloom et al. (2002) published a list of the 100 most eminent psychologists of the 20th century. The article has generated much attention: according to Google Scholar, it has been cited nearly 400 times. To compile their rankings, Haggbloom et al. relied on multiple means of determining eminence, combining journal citation counts, citations in introductory psychology textbooks, a survey of 97 APS members, awards and memberships in honorary societies, and the existence of eponyms (e.g., "Skinner box").

Haggbloom's top 20 can be found in Table 1.

This was by no means the first time that psychologists had tried to determine who, among their number, is the most eminent. Indeed, there have been nearly continual efforts to do so going right back to the first years of the 20th century (e.g., Annin, Boring, & Watson, 1968; Becker, 1959; Cattell, 1903, 1933; Coan & Zagona, 1962; Dennis, 1954a, 1954b; Garfield, 1992; Kaess & Bousfield, 1954; Knapp, 1985; Korn, Davis, & Davis, 1991; Myers, 1970; Ruja, 1956; Simonton, 1992; Tinker, Thuma, & Farnsworth, 1927). Many of the individual methods that Haggbloom et al. brought together had first been pioneered by one or another of these earlier authors. One thing they all had in common, however, was the assumption that the final result would be singular, generally valid for all psychologists regardless of their own demographic situation (e.g., gender, age, location).

In the present project, by contrast, we wondered what would happen if the process of ranking historical figures were opened up to anyone interested in participating. This much wider population of people would include experts, of course, but the experts might well be out-numbered by individuals with a more casual interest in the topic: "ordinary" psychologists who are not departmental chairs and who do not specialize in the discipline's history, students who are taking history of psychology courses, perhaps even some people with little formal psychological training but with a personal interest in the matter nonetheless.

Our working questions were: (1) How would a list of psychological impact that had been "crowd-sourced" in this way compare to the "expert" lists that have been compiled in the past? (2) If there are differences between a list compiled in this way and the traditional lists, where would we find them? (3) Perhaps most interesting, would demographic sub-groups differ in their assessments of psychologists' eminence; e.g., Would men judge differently from women? Older people differently from younger ones? North Americans differently from Europeans and South Americans?

To obtain evaluations of the impact that various historical figures have had on psychology, we created a digital "game" that could be accessed on-line by anyone who wanted to play (see http://elo.sha.nemart.in). The first screen described the game and asked for

* Corresponding author. Department of Psychology, York University, Toronto, ON M3J 1P3, Canada.
E-mail address: christo@yorku.ca (C.D. Green).

http://dx.doi.org/10.1016/j.newideapsych.2017.04.001
0732-118X/

Table 1
20 Most eminent psychologists in Haggbloom et al. (2002).

1. B.F. Skinner	11. Gordon W. Allport
2. Jean Piaget	12. Erik H. Erikson
3. Sigmund Freud	13. Hans J. Eysenck
4. Albert Bandura	14. William James
5. Leon Festinger	15. David C. McClelland
6. Carl R. Rogers	16. Raymond B. Cattell
7. Stanley Schachter	17. John B. Watson
8. Neal E. Miller	18. Kurt Lewin
9. Edward Thorndike	19. Donald O. Hebb
10. A.H. Maslow	20. George A. Miller

consent to use the player's data in this research. Players who declined were allowed to play the game, but their data was not used in the present analysis. Players who granted consent were asked a few demographic questions (gender, age, past training in psychology) before playing the game. The game began with the player being shown the names of a pair of historical individuals associated with psychology. Attached to each name was a brief summary of his or her career, along with a link to the relevant *Wikipedia* entry, should the player wish to know even more. The player was asked to choose which member of the pair "had the greater impact on psychology." As soon as the player chose one of the two names, s/he was presented with a new pair of names. The game continued in this fashion until the player decided to stop playing.[1]

The first name of each pair of historical figures was selected at random from a list of 402 significant individuals we had compiled. The second name was selected at random from among those figures whose score (see below) was within 150 points of the first one. The rationale for this selection procedure was that it maximized the number of close comparisons and did not waste players' time by having to choosing between figures of highly divergent import (except during the very earliest days of the game, before their score had begun to diverge). This is a common strategy when using the popular Elo rating system to generate rankings from paired choices, as we did. The Elo rating system was originally developed to generate rankings among chess players. It is now used to create rankings in many games and sports where rankings are required. It has also been used as the basis for "soft biometrics" (see e.g., https://en.wikipedia.org/wiki/Elo_rating_system#Use_outside_of_chess).

When one of our players indicated a preference for one of the two names in a pair, the Elo score for that name was incremented by a few points and the score of its counterpart was decremented the same number of points (generally 2 to 6 points, the exact value being determined by the Elo function). The Elo rating system generates a larger increment when an "underdog" beats a "favorite" (based on their current scores). All of the names in our pool started with an arbitrary score of 1200. This allowed them to move up or down as they won or lost without the scores falling into negative territory.

The list of names used was drawn from two popular biographical dictionaries of psychology (Sheehy, Chapman, & Conroy, 2002; Zusne, 1984). Our original pool included over a thousand names. We eliminated the names of nearly all of those who were active before the 19th century (How exactly does one go about comparing the relative impacts *on psychology* of, say, Thomas Aquinas and Gordon Allport?). This left about 800 names. Initially, we intended to run the game using this list. When we pilot tested the game with a number of players, however, we received a common complaint that many of the names were unfamiliar even to players who were quite knowledgeable about psychology's past. This sapped motivation to play the game spontaneously (i.e., it was boring). We decided to remove the names of the figures who were deemed to be most obscure. We were left with a pool of 402 names. Naturally, other expert historians of psychology might have made somewhat different choices about borderline cases, but who was considered to be, e.g., 390th and who was 410th would have little impact on which historical individuals ultimately appeared anywhere near the top of the ranked list. A second round of pilot testing received more positive comments.

The game was publicly launched on September 16, 2015. We sent announcements to several e-mail lists dedicated to the teaching of psychology and to the history of psychology. These announcements briefly described the game, explained that it was also a research project, and urged recipients not only to play it themselves but also to pass information about the game on to their colleagues and students.

1. Demographics of the players

The response was quite strong. When we closed data collection for the present report on April 2, 2016, 66,852 ratings had been logged in across 892 distinct sessions.[2] (An additional 100 sessions, 10%, declined to have their data included in the study.) Typical sessions generated between 20 and 30 ratings. As can be seen in Fig. 1, the distribution was highly positively skewed. Only a very few sessions resulted in more than 500 ratings. One particularly enthusiastic player contributed 1637 ratings.

There were virtually identical numbers of male and female sessions (442 male, 443 female, along with 6 who described their gender as "custom"). Males tended to play somewhat longer, on average: the male median session was 33 ratings; the female median session was 22. As a result, the total number of ratings by males was 74% higher than the total number of ratings by females: 41,562 to 23,882, respectively.

The youngest player was 18 years of age. The oldest was 91. The boundaries between age quartiles were 30, 39, and 53. One could, thus, roughly characterize the age quartiles as people in their 20s, 30s, 40s, and 50+ (the mean age for the oldest quartile was 63.7 years). Each age quartile was composed of approximately 223 players (there was some variation in the frequencies due to ties). Older players tended to play longer than younger ones. The mean number of ratings for each of the age quartiles, from youngest to oldest was 38, 49, 79, and 130.

With respect to education level, 113 sessions indicated that the player was undertaking a bachelor's degree in psychology; 59 had completed one (and had not continued further). Two more did not report their level. These totaled 174 sessions, which we designated collectively as "undergraduates." A total of 120 sessions were from players who were undertaking or had completed a master's degree in psychology (and not continued). A total of 485 sessions indicated that the player was undertaking or had completed a doctorate in the field. Ten reported some "other" level of education in

[1] Several players mentioned to us early on that they did not "know when to stop" playing. They had expected to reach a signal that the game was "over." To address this confusion, after about 10 weeks, we inserted a message after every 25 pairs, telling them how many choices they had made and reminding them that they could stop at any time. This appeared to make little difference to how long they chose to play.

[2] "Sessions" are roughly equivalent to players. Each time a player starts playing, a new session is opened, corresponding to the web browser from which the person is playing. The session remains active until a month has passed without any activity. It is important to note that, in some cases, more than one session probably corresponded to a single player because that player either used more than one browser (e.g., home, work) or s/he stopped playing for more than a month before playing again.