Measuring motivational gravity: Likert or scenario scaling?

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Introduction

Recent literature on the motivation to achieve has discussed the possibility that individual success may incur various social costs, especially in cultural contexts wherein collectivism or equalitarianism is the norm[e.g. 1-7]. It has been argued elsewhere[4] that such social costs are particularly likely to occur in the workplace. Insecure superiors and/or envious co-worker peers may discourage rather than encourage high achievers, thereby creating negative "motivational gravity" to counter any "unidirectional drives upwards"[8]. Yet there is a dearth of evidence regarding the psychometric properties of available measurement scales in the workplace[9]. This preliminary study compares aspects of validity for Carr's[2] Motivational Gravity Scenario Scale (MGSS) and for Feather's[6] Tall Poppy Scale (TPS), within a reportedly equalitarian Australian work context[10].

Contrary to Hofstede's study of IBM employees in the 1970s[11], in which Australia ranked second only to the USA in terms of "individualism", contemporary Australian culture is often characterized in terms of a "tall poppy syndrome"[6]. That is, personal achievement in life is liable to be regarded as a betrayal of a norm of equality, thereby provoking a desire to see the achiever fall. Recently, there has been growing speculation that this syndrome may be suppressing innovation in the Australian workplace[12-15].

The scales

The MGSS distinguishes employee relations in terms of those between:

- superiors and subordinates; and
- co-worker peers[3].

Accordingly, the scale contains two scenarios: one which describes a successful subordinate ("puts forward bright ideas, or is taking a correspondence course, or is very keen"), and one which describes a successful co-worker peer ("often gets a bonus, or is awarded a trip overseas, or is promoted ahead of time").

Because MG is principally a psychological field[4], respondents estimate how many typical bosses out of ten (for the first scenario) and co-worker peers (for the second), would display encouragement, discouragement, and indifference towards a high achiever. Net workplace motivational gravity is calculated by subtracting the group mean for discouragement from the group mean for encouragement, expressed on a percentage scale, for bosses and for co-worker peers. These two scores enable the researcher to categorize an organizational culture into one of the quadrants shown in Table I.

Superior/subordinate dimension	Co-worker peers dimension
Superiors pull up (S+)	Co-worker peers push up (C+)
Superiors pull up (S+)	Co-worker peers pull down (C−)
Superiors push down (S−)	Co-worker peers push up (C+)
Superiors push down (S−)	Co-worker peers pull down (C−)

Table I.
Workplace motivational gravity

Although the indirect scenario format is primarily intended to reduce anticipated social desirability effects[16], respondents also self-report how they themselves would probably react (encourage, discourage, ignore) as a boss and as a co-worker peer to the character in each scenario.

Feather's TPS is a Likert scale developed on student populations in Australia, where it has demonstrated high internal consistency[6]. Twenty positively worded items are each scaled from −3 (strongly disagree) to +3 (strongly agree), with no neutral point. Ten items express "favour reward" (FR) and ten items independently express "favour fall" (FF) attitudes towards high achievers in various non-specific settings (e.g. "the very successful person should receive public recognition for his/her accomplishments"; and "very successful people who fall from the top usually deserve their fall from grace").

Study I
Respondents in study I were 80 male and female shop assistants ($n = 64$) and retail store managers ($n = 16$) employed in a chain of food stores in New South Wales. Forty-four were of Anglo-Australian background and the remainder were Asian-Australians. The mean encouragement and discouragement scores, before combining, were negatively correlated to one another ($p < 0.001$, two-tailed), both for the bosses scenario ($r = −0.534$) and for the co-worker peers scenario ($r = −0.412$). This indicates that net encouragement scores (encouragement minus discouragement) would be reasonably internally reliable. On the MGSS, net encouragement levels were +52 per cent towards subordinates and +42 per cent towards co-worker peers, while the equivalent

figures for self were +92 per cent and +80 per cent (i.e. at a personal level, respondents reported that they would be encouraging).

These comparatively inflated figures suggest that social desirability effects may have been contaminating responses at the self-report level. Respondents also completed ten items from the Marlowe-Crowne social desirability scale[17]. These items were chosen because of their salience to the TPS (e.g. "it is hard sometimes to go to work if I am not encouraged"; and "there have been times when I have been jealous of the good fortune of others"). MGSS net encouragement scores did not correlate with social desirability, either for Anglo or Asian Australians. On the TPS, however, FR scores were significantly correlated with social desirability ($r = +0.234$, $n = 80$, $p < 0.05$). When we analysed the data separately for each ethnic group, this correlation emerged only in the Anglo Australian group ($r = +0.421$, $n = 43$, $p < 0.01$). These preliminary results therefore suggest that a scenario-based method of assessment may be less confounded by social desirability effects than the conventional Likert-scale[16], at least concerning the measurement of motivational gravity in a culturally diverse work context.

Study II
While confounding variables are one important source of contamination in the use of psychometric scales, the face validity of measures is another important factor, especially if the instrument is to be used cross-culturally. Indeed, such measures of face validity are arguably a necessary condition for scale use in cross-cultural contexts[18].

Respondents in study II were 96 male and female psychology undergraduates ($n = 49$) and employees ($n = 47$) of Home Care Service, an organization caring for geriatric out-patients[19]. On completing each instrument, these respondents were asked "how well does the questionnaire you have just completed enable you to express your own views?", on a rating scale from highly unsatisfactory (1) to highly satisfactory (6). To the students, the MGSS was less satisfactory than the TPS (mean = 3.78 vs 4.78), but the preference was reversed for the Home Care Service employees (mean = 4.55 vs 3.36). A mixed model ANOVA revealed that the interaction was highly significant ($F_{1,94} = 50.2$; $p < 0.001$).

Among the 47 Home Care Service workers, and consistent with study I, mean encouragement and discouragement scores before combining were negatively correlated to one another ($p < 0.001$, two-tailed), both for the bosses scenario ($r = -0.631$) and for the co-worker peers scenario ($r = -0.435$). Self-reports now contrasted even more sharply with perceived net encouragement levels (+88 per cent and +75 per cent versus –12 per cent and –10 per cent for bosses and co-worker peers respectively). These perceived net encouragement levels place the organizational culture of Home Care Service in a completely opposite category ($S^- C^-$, push down, pull down) to the food stores ($S^+ C^+$, pull up, push up). Thus, the MGSS may possess discriminatory power and contain warnings against regarding organizational cultures as microcosms of the national culture[11].

Discussion and recommendations

Perhaps we should not be too surprised if workers tend to prefer a workplace-focused scale over an instrument developed on student populations. However, there may be more subtle reasons for this preference. We suspect that the interaction between employment and scale-face validity can also partly be accounted for by students, with their higher average level of education and literacy, being more comfortable with an instrument that requires a more exacting level of verbal ability. Consequently, the scenario-based method may be more attractive for cross-cultural settings, especially countries that are "developing" or contain a high proportion of immigrants whose verbal ability in the vernacular may be low. Alternatively, the narrow focus and consequential brevity of the MGSS may suit workers more, while not necessarily being broadly representative of real-life situations.

The comparative brevity of the MGSS may bring the advantages of ease and low cost of administration, but the same brevity imposes some limitations on its use. While it is arguable that group means would remain relatively stable in time, and that comparisons of group means would provide valid comparisons for experimental and survey purposes, selection and placement demands mean that managers will often want an assessment of individual differences. This requires not only that respondents generate a score on a reasonably fine-grained continuum, but also that this score represents their reactions to a range of realistic situations with which they might be faced. If this requirement is not met, scores could be very reliable (because of memory) but invalid (because of unrepresentativeness).

Our preliminary findings therefore indicate that a scenario-based measure may provide broad descriptions and comparisons of organizational cultures, while highlighting the need to develop a more sophisticated, multiple-item instrument for assessing individual employees. If this instrument is to be a Likert scale, then it may be advantageous to use the social desirability score as a criterion for eliminating transparent items in the initial stages of its development. It is still possible, however, that the validity of Likert scales may be reduced by verbal ability factors, especially in culturally diverse contexts. In this event, the construction of a multiple item, scenario-based instrument may be more appropriate. Such a scale would also have the attraction of enhancing the internal reliability of the current MGSS. In the present study, however, the workplace- and scenario-focused MGSS has proved less susceptible to social desirability effects, and more satisfactory to some respondents, than the more conventional instrument.

References

1. Abdullah, A., *Understanding the Malaysian Workforce*, Malaysian Institute of Management, Kuala Lumpur, 1994.
2. Carr, S.C., "Generating the velocity to overcome motivational gravity in LDC business organizations", *Journal of Transnational Management Development*, Vol. 1 No. 2, 1994, pp. 33-56.

3. Carr, S.C. and MacLachlan, M., "Managing motivational gravity through African-Asian synergy", in Haji-Yusuf, M. and Awang, M. (Eds), *Afro-Asian Psychology: Social and Organizational Perspectives*, Penerbit Universiti Kebangsaan Malaysia, Bangi, pp. 147-55 (in press).

4. Carr, S.C., MacLachlan, M., Zimba, C. and Bowa, M., "Managing motivational gravity in Malawi", *Journal of Social Psychology*, Vol. 135 No. 5, 1995, pp. 659-62.

5. Carr, S.C., MacLachlan, M. and Schultz, R., "Pacific Asia psychology: ideas for development?", *South Pacific Journal of Psychology*, Vol. 8, 1995, pp. 1-18.

6. Feather, N.T., "Attitudes towards high achievers and reactions to their fall: theory and research concerning tall poppies", *Advances in Experimental Social Psychology*, Vol. 26, 1994, pp. 1-73.

7. MacLachlan, M., Nyirenda, T. and Nyando, C., "Attributions for admissions to Zomba Mental Hospital: implications for the development of mental health services in Malawi", *International Journal of Social Psychiatry*, Vol. 41 No. 2, 1995, pp. 79-87.

8. Festinger, L., "A theory of social comparison processes", *Human Relations*, Vol. 7 No. 2, 1954, pp. 117-40.

9. Carr, S.C., Pearson, S.A. and Provost, S.C., "Learning to manage motivational gravity: an application of group polarization", *Journal of Social Psychology* (in press).

10. Carr, S.C., "Social psychology and culture: reminders from Africa and Asia", in Grad, H., Blanco, A. and Georgas J. (Eds), *Proceedings of the XII International Congress of Cross-cultural Psychology*, Swets & Zeitlinger, Amsterdam, 1996, pp. 68-85.

11. Hofstede, G., *Culture's Consequences*, Sage, Beverly Hills, CA, 1980.

12. Brewer, A.M., *Change Management: Strategies for Australian Organisations*, Allen & Unwin, Sydney, 1995.

13. Karpin, D., "Enterprising nation", *The Quality Magazine: Official Publication of the Australian Quality Council*, Vol. 4 No. 3, 1995, pp. 20-8.

14. Anderson, R. and Alexander, R., "Innovate to grow", *Management: The Magazine of the Australian Institute of Management*, October 1995, pp. 8-10.

15. Robbins, S.P., Waters-Marsh, T. and Cacioppe, R., *Organisational Behaviour: Concepts, Controversies, and Applications*, Prentice-Hall, Sydney, 1994.

16. Sinha, D., "Cross-cultural psychology and the process of indigenisation: a second view from the Third World", in Keats, D.M., Munro, D. and Mann, L. (Eds), *Heterogeneity in Cross-cultural Psychology*, Swets & Zeitlinger, Amsterdam, 1989, pp. 24-40.

17. Crowne, D.P. and Marlowe, D., "A new scale of social desirability independent of psychopathology", *Journal of Consulting Psychology*, Vol. 24 No. 4, 1960, pp. 349-54.

18. MacLachlan, M., Mapundi, J., Zimba, C. and Carr, S.C., "The acceptability of a Western psychometric instrument in a non-western society", *Journal of Social Psychology*, 1995, Vol. 135 No. 5, pp. 645-8.

19. Bloor, G. and Dawson, P., "Understanding professional culture in organizational context", *Organization Studies*, Vol. 15 No. 2, 1994, pp. 279-99.