

# A Performance-Based Group Approach to the Treatment of Anosognosia and Denial

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**ABSTRACT:** Anosognosia and defensive denial frequently interfere with effective rehabilitation of the brain injured. An innovative performance-based group treatment approach was developed to manage these phenomena. Patients' predictions for their own performance were compared to their actual performance in a group format entitled the "Self-Awareness Group." The approach is described and data are provided demonstrating significantly improved self-predictions for performance both within and across treatment sessions, suggesting improved awareness of cognitive impairments and strengths. Techniques for facilitating generalization, as well as potential adverse treatment effects, are discussed.

One of the more challenging and resistant difficulties faced by rehabilitation professionals working with brain injury victims can be the patients' lack of awareness regarding the nature and extent of their disabilities. This lack of awareness frequently results in reduced motivation for participation in rehabilitation programs. It can also lead to the setting of unrealistic goals for themselves, given the severity of the patient's cognitive, physical, or behavioral impairments. Prigatano (1985) has gone so far as to state that denial of cognitive and behavioral dysfunction in the head injured represents the single greatest impedance to functional re-entry into society. It is only through a realistic understanding of one's own strengths and limitations that maximum benefit from rehabilitation can be achieved.

A number of etiologies for lack of awareness in the brain injured have been proposed. Anosognosia refers to the syndrome commonly seen in patients with focal right hemisphere damage, where cognitive or physical dysfunction is denied despite overwhelming evidence to the contrary. It is presumed to be organic in etiology. Ranssen and Bohaska (1987) demonstrated that as a group, head injured patients in a rehabilitation setting tended to give inflated estimates of their own abilities as compared with estimates made by the staff. Furthermore, patients with focal right hemisphere damage showed significantly greater discrepancies between self and staff rating than patients with left hemisphere damage.

An alternate explanation is that some brain injured patients with severe memory impairments may forget their frequent cognitive failures. In a study related to this issue, Boake et al. (1987) showed that head injured patients' self-ratings of their memory loss were essentially unrelated to objective memory performance. This was interpreted as suggesting that although some patients may have accurate perceptions of their memory performance, others do not.

A third explanation may be that denial of deficit functions as a psychodynamic defense mechanism; that is, that knowledge of a deficit, its prognosis, and the resulting anxiety and depression are unacceptable to the patient (Weinstein and Kahn, 1955). This model would predict that awareness of deficit would be positively related to depression. Indeed, Boake et al. (1987) found a significant positive correlation between the amount of memory impairment admitted by head injured patients and their self-reported level of depression.

Whatever the cause, it has been our experience that these patients can be quite tenacious in their denial. Direct verbal confrontation frequently does not result in recognition of impairment, but rather seems to galvanize the patients' outlook. Therefore, we developed an innovative treatment approach for the denial of deficit. The treatment is done in a format entitled the "Self-Awareness Group."

## METHOD

### Participants

Patients attending a head injury and stroke rehabilitation day hospital who were identified by staff as having poor awareness of their deficits participated in the group. Etiologies included closed head injury, gunshot wound, anoxia, arterial venous malformation, and a variety of cerebrovascular accidents. Aphasic, acutely confused, and profoundly impaired patients were excluded from the group. Because of the fluctuating patient census and variable lengths of stay, repeated measures across multiple sessions on each of the two tasks described below were obtained for only six patients (Figures 3 and 4). Also, the number of patients for the first session of both tasks was unequal (Figure 1,  $N = 19$ ; Figure 2,  $N = 17$ ).

### Procedure

The self-awareness group was designed as a nondirect, performance based, group approach for the treatment of denial. Patients were given the explanation that after brain injury individuals frequently have changes in their intellectual abilities and that the purpose of the group was to help them identify their cognitive strengths and weaknesses. Patients were presented with a broad range of cognitive tasks (the present paper discusses two such tasks: a 12-word free recall task and a written arithmetic computation task).

Each task was first presented to the patients. A sample word list was read for the verbal free recall task and they were shown the problems they were to solve for the calculation task. After the task was presented, they were asked to predict their level of performance; that is, how many arithmetic problems they would correctly solve or words they would recall. Their predictions were written on a blackboard under their name for all to see. The patients then performed the task and their re-sponses were scored. Their actual level of performance was

written on the black-board next to their prediction and any discrepancies were noted and discussed. Patients were then presented with another task in the same modality and the procedure was repeated.

## RESULTS

Non-parametric statistical tests were performed for each cognitive task comparing the frequencies that patients' predictions did and did not exceed their levels of performance. Changes in performance between trial 1 and trial 2 of the first session were examined. Then, trial 1 of the first session was reexamined, this time comparing it to trial 1 of the second session. In the first session that the patients were exposed to the verbal free recall task, their predictions exceeded their actual performance significantly fewer times on trial 2 than on trial 1,  $\chi^2(1) = 5.22$  ( $p < .05$ ). Likewise, predictions on the calculation task exceeded actual performance significantly fewer times on trial 2 than on trial 1,  $\chi^2(1) = 5.85$  ( $p < .05$ ).

To determine if the positive treatment effect within a session would remain stable over time, analyses were performed examining the first trial across two separate sessions. The effect for the verbal recall task was not significant ( $p > .05$ ). However, the effect for the calculation task was significant,  $\chi^2(1) = 4.0$  ( $p < .05$ ).

Examination of Figures 1 and 2 suggests that when patients were initially introduced to either cognitive task, they tended to predict a higher level of performance than they were actually capable of achieving. This is consistent with some degree of denial of the extent of their cognitive deficits. Figures 1 and 2 also indicate that the feedback provided in the self awareness group tended to cause them to reduce their predictions on the second trial.

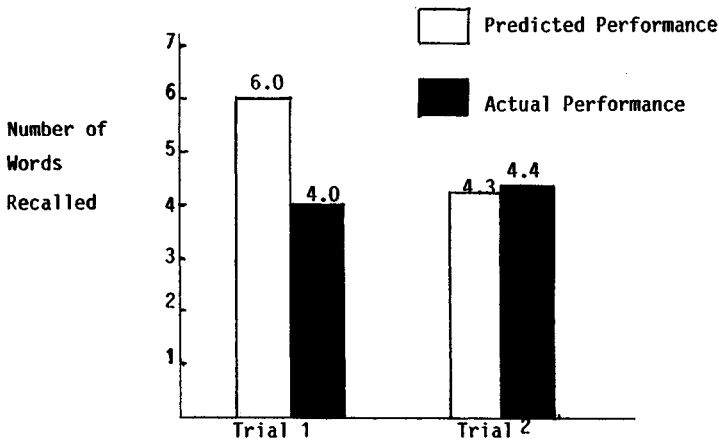
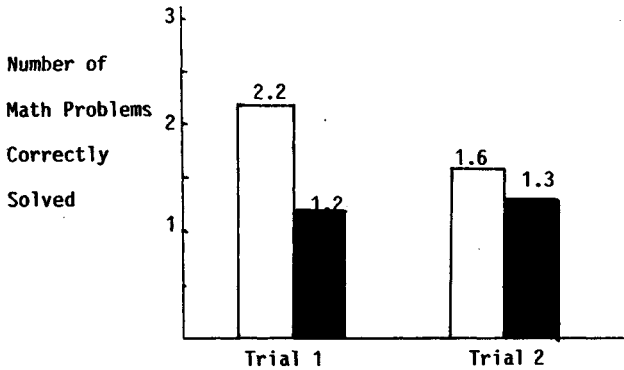
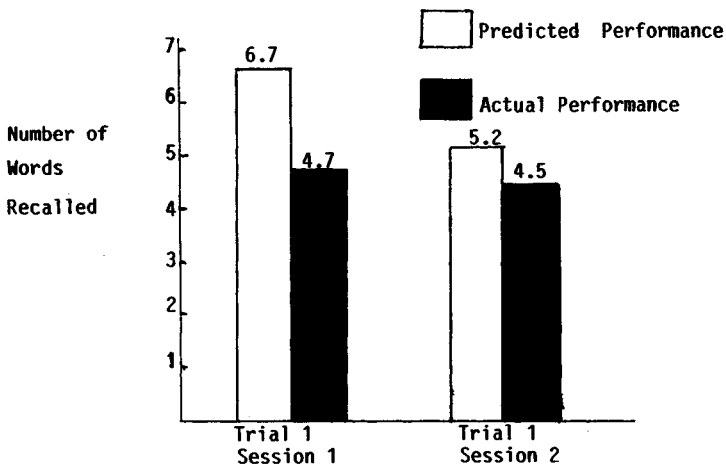


Figure 1. Number of words predicted and actually recalled on two trials of the first session ( $n = 19$ ).



**Figure 2.** Number of math problems predicted and actually solved correctly on two trials of the first session ( $n = 17$ ).

Examination of Figure 3 demonstrates that although it was not significant, there was a trend for improved awareness over time for the verbal recall task. The difference between prediction and performance on the follow-up session tended to be smaller than initially shown on the first session. Figure 4 demonstrates a similar and statistically significant treatment effect for the calculations task.



**Figure 3.** Number of words predicted and actually recalled on the first trial of sessions 1 and 2 ( $n = 6$ ).

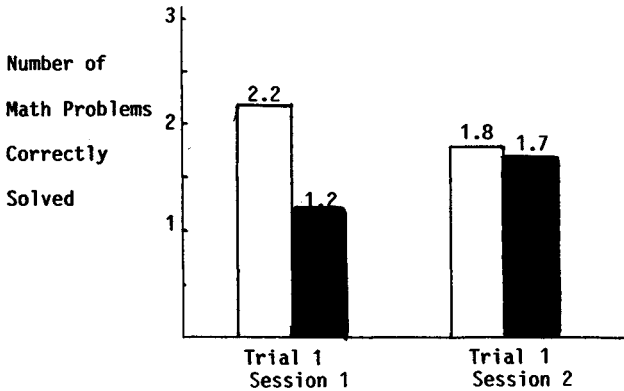


Figure 4. Number of math problems predicted and actually solved correctly on the first trial sessions 1 and 2 ( $n = 6$ ).

## DISCUSSION

These results demonstrate significantly improved predictions after feedback in the self-awareness group on two separate cognitive tasks. Patients were able to make more accurate predictions of their performance immediately after the feedback given in the first session. This positive treatment effect was maintained, albeit in a weakened state, when the task was presented to them again a week later. However, the two most important issues for the clinician are whether these effects generalize and what effects improved awareness have on everyday life. A subjective analysis of the self-statements of our patients regarding their need for continued rehabilitation, to immediately resume driving, to return to work, etc., suggests that some generalization did indeed occur. However, this generalization did not occur to nearly the same extent as was seen on the specific tasks performed during the self-awareness group sessions.

To facilitate generalization, we have found it helpful to refer back to the patients' performance in the self-awareness group. For example, when patients state that their physical and cognitive impairments are not severe enough to make them unsafe drivers, the therapist might point out their unrealistic predictions during the awareness group. This would demonstrate that their own perception of their abilities may be inaccurate. Another way to facilitate generalization is to increase the variety of the tasks covered in the awareness group. Other tasks that we have used include visual-spatial problem solving, abstract reasoning, nonverbal memory, and verbal fluency.

In several patients' cases, an adverse effect of reducing denial was noted. As they began to understand the nature and extent of their cognitive impairments, they

occasionally developed a mild reactive depression. This was sometimes noted in their self-awareness group performance when they would consistently make under-predictions for themselves and subsequently perform below their potential. A similar finding was reported by Boake et al. (1987) who found that those head injured patients who did admit to memory impairment also reported a significantly higher level of depression.

Prigatano (1985) has suggested that developing a reactive depression in response to increased awareness is a "healthy" response and a step towards an overall improved level of functioning. As such, it can be seen as a necessary phase towards developing a realistic awareness of one's own limitations, yet a hopeful and determined outlook for the future. Thus, the ultimate goal in rehabilitation for many patients may be helping them to reduce their levels of aspiration and form new goals that are realistically achievable. In this process, it is important that the level of depression not be allowed to become severe enough as to impede motivation and progress in rehabilitation.

Finally, although we have found our approach to the treatment of denial effective, it is by no means the final answer to a very resistant behavioral syndrome. Its effectiveness is increased when supplemented with individual and group counseling, and participation in a multidisciplinary therapeutic regimen.

## REFERENCES

- Boake, C., Freeland, J., Reinghalz, G., Nance, M., & Edwards, K. (1987, February). Awareness of memory loss after severe head injury. Paper presented at the 15th annual International Neuropsychological Society Meeting, Washington, D.C. (Abstract) *Journal of Clinical and Experimental Neuropsychology*, 9, 53.
- Prigatano, G. P. (1985). *Neuropsychological rehabilitation after brain injury*. Baltimore: Johns Hopkins University Press.
- Ranseen, J. D., & Bohaska, L. (1987). Self-awareness following traumatic brain injury. Paper presented at the 15th annual International Neuropsychological Society Meeting in Washington, D.C. (Abstract) *Journal of Clinical and Experimental Neuropsychology*, 9, 56.
- Weinstein, E. A., & Kahn, R. L. (1955). *Denial of illness*. Springfield, IL: Charles C. Thomas.

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