Implementing Intervention Research in Doctoral Education

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Implementing Intervention Research in Doctoral Education: Maximizing Opportunities in Training for Outcome Evaluation

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ABSTRACT. Rigorous experimental research examining the effectiveness of practice interventions rarely appears in the social work literature. Among the reasons often cited are the difficulties of conducting such research, and the lack of adequate preparation in social work education. Translating the goals of outcome-oriented research into successful educational models is easier said than done. This paper describes a partial application of Rothman and Thomas’ innovative work on intervention research in doctoral curriculum, emphasizing the elements of design and development. The adaptation is illustrated through a series of studies examining the effectiveness of meditation on psychosocial functioning.

KEYWORDS. Intervention research, doctoral education, practice evaluation, maha mantra, meditation, outcomes, curriculum

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INTRODUCTION

The strengths of rigorous, experimental research designs, and the preference they often receive in competition for external funding, contribute to the emphasis placed upon them in education and training recommendations in social work (Abell & Hudson, 2000). The advantages provided by such designs, however, are to some degree offset by the challenges faced in accomplishing them. Rosen, Proctor, and Staudt’s (1999) review of social work research literature on intervention effectiveness found that, between 1993 and 1997, only 15 percent of studies reported repically described investigations of measurably defined interventions linked to specific outcomes. Of even greater concern, “only 3 percent of all published articles (53 of 1,849) could inform a practitioner of how to implement reliably the intervention that was studied” (Rosen et al., 1999, p. 12).

Successful conception and implementation of experimental outcome studies require a degree of training not uniformly achieved in graduate social work education (Fraser, Jenson, & Lewis, 1993). Early, optimistic conceptualizations of the scientist-practitioner notwithstanding, more realistic contemporary opinions and policy statements (cf. National Association of Deans and Directors, 1997) argue for the active promotion of practice researchers. Translating these goals into successful educational models is easier said than done. Summarizing the protracted debates over whether and how to promote practice evaluation methodology in social work, Schilling acknowledged “the technology is at best awkward . . . (and) after more than two decades, it has hardly captured the imagination of line workers” (1997, p. 174).

Numerous challenges confront those interested in examining practice effectiveness. Among them are the limitations on conclusiveness and generalizability inherent in single system designs, and the expense and complexity of group designs (Abell & Hudson, 2000). These include problems ranging from informed consent, random assignment, and loss of subjects, to data analytic strategies that can severely limit the applicability of results to specific clients (Nugent, 1996). Taken together, these shortcomings can reduce the willingness of agency staff to participate in evaluation efforts, and contributed to Polansky’s caution that “if one is not absolutely convinced from clinical experience that a treatment works, there is seldom any point in subjecting it to large-scale testing” (1994, p. 394).

Still, progress is evident. Austin (1998) acknowledged substantial gains in practice research, among them: evidence of recurrent interest in
traditional social work problems and populations, the emergence of NIMH Social Work Research Development Centers, and improvements in academic research infrastructures. Continued progress, he argued, may depend on substantial mentoring, sustained supports, and active encouragement of interdisciplinary collaboration, beginning in doctoral education, and continuing throughout an academic career.

This paper describes a partial application of Rothman and Thomas’s (1994) innovative work on intervention research in doctoral curriculum, emphasizing the elements of design and development. Identified by Shilling as the potential “elusive bridge between practice and research” (1997, p. 174), the intervention research model structures empirical outcome studies through a series of overlapping phases. We will argue that the model, at first daunting and potentially overwhelming, can be adapted well to the small-scale investigations often characteristic of doctoral projects. One such adaptation will be illustrated through a series of studies examining the effectiveness of meditation on psychosocial functioning.

**INTERVENTION RESEARCH IN SOCIAL WORK EDUCATION**

The primary components of intervention research include knowledge development (empirical research on the expressions and contexts of human behavior), knowledge utilization (linking the resulting findings to potential interventions), and intervention design and development (collaborative shaping and evaluation of intervention strategies) (Thomas & Rothman, 1994). While each can be independently pursued, ultimately, they are interrelated elements of a comprehensive process whose common goal is identifying practical and effective interventions for social and personal problems.

The last of these components, design and development (D&D), often incorporates aspects of the first two, and is our focus. Thomas and Rothman (1994) decomposed this component into six sequential and sometimes overlapping phases. These are (1) problem analysis and project planning, (2) information gathering and synthesis, (3) intervention design, (4) early development and pilot testing, (5) evaluation and advanced development, and (6) dissemination. As their labels imply, these phases constitute a potential flow chart guiding practitioners, researchers, and educators through a thorough plan for practice innovation and evaluation.
In problem planning and analysis, participants collaborate, often extensively, in identifying the issue(s) to be addressed, and in clarifying the roles and responsibilities each will play in the process. At this stage, participants must often confront what Rothman describes as “the complex and multi-faceted character of intervention research,” concluding that “planning may thus be thought of as encompassing a sequence of sub-studies, each of which is different and substantial in its own right” (1994, p. 84). This phase is particularly dynamic, ideally envisioning the entire D&D process, which may range from three to even ten years, and is subject to ongoing revision over time.

The obvious challenge for adapting the model to doctoral training begins with recognizing that D&D cannot be accommodated entirely in any single project (Fawcett et al., 1994). To succeed, students and advisors must work together to plan a series of efforts matched to curricular requirements, and including opportunities for reward (publication, presentation, etc.) along the way. Concurrently, the education process must contain a set of reasonable compromises, balancing the ideals of D&D with realistic goals for completion of a degree. An adaptation of D&D phases to doctoral education is illustrated in Figure 1, and elaborated upon in the following sections.

INTEGRATING D&D IN DOCTORAL CURRICULUM

At a major, public, Southern university, the doctoral research curriculum consists of five methods courses, a minimum of two statistics courses, a specialization area paper, and two guided independent research projects (a practicum, and dissertation). The methods courses are taught by several social work faculty, and the statistics courses are taken through appropriate departments on campus. The practicum spans two semesters, exposes students to “hands on” research experience, and varies in the degree to which students initiate original work or join faculty in projects already underway. Any tenure-earning faculty member may supervise it. The specialization area paper, essentially an elaborate literature review, often serves as a draft of the first two chapters of the dissertation prospectus. Typically, the same faculty member, assisted by a supervisory committee, chairs this paper and the dissertation itself.

The first methods course (Philosophy of Science in Social Work) orients students to the ontological and epistemological foundations of knowledge development, emphasizing the implications for research conceptualization and design. The second methods course (Theory, De-
FIGURE 1. Adapting D&D Phases and Curriculum to a Doctoral Research Agenda

<table>
<thead>
<tr>
<th>D&amp;D Phases</th>
<th>Curriculum Components</th>
<th>Research Agenda</th>
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| Problem Analysis and Problem Planning | *Philosophy of Science in Social Work  
*Theories and Models of Social Work  
*Theory, Design, and Problem Formulation | Validation of the VPI**  
Development of Vedic Theory of Social Work  
Preliminary application of theory to practice  
Beginning methodological considerations |
| Information Gathering and Synthesis  | *First Required Statistics  
*Research Issues in Direct Practice  
*Specialization Area Paper | Systematic Research Syntheses:  
- Spiritually Based Communities  
- Interventions  
- Maha Mantra Meditation |
| Intervention Design                  | *Second Required Statistics  
*Assessment and Measurement in Social Work  
*Advanced Research in Social Work  
*Research Practicum                  | Draft Prospectus/Dissertation  
Chapters 1-3  
Refining Proposed Evaluation Methods |
| Early Development and Piloting       | *Elective (Applied Methods DIS, Statistics)  
*Research Practicum (continued)  
*Dissertation Prospectus             | Completing Single-System Mantra Pilot Study  
Defending Proposal for Outcome Evaluation |
| Evaluation and Advanced Development  | +Dissertation                                                                     | Randomized Experimental Trial Using VPI                                      |
| Dissemination                        | Publication and Presentation                                                      | Articles on validation, pilot, and formal evaluation                          |

*Courses, + Projects, **Timing reflects variation in standard course sequence
sign, and Problem Formulation), complemented by the first statistics course, establishes a foundation for the methodologies required both in Rothman and Thomas’s (1994) knowledge development component, and in the pilot testing and evaluation phases of D&D.

The third methods course (Research Issues in Direct Practice) introduces students to intervention research. Its primary project addresses the second phase of D&D (information gathering and synthesis), requiring either a meta-analysis (Forness & Kavale, 1994) or systematic research synthesis (Rothman, Damron-Rodriquez, & Shenassa, 1994) of literature in an area of the student’s choosing. Students are encouraged to envision this paper, submitted for publication, as the foundation for their specialization area papers and, subsequently, prospecti and dissertations. Klein and Bloom’s (1994) guidelines are used to organize the analysis of conceptual and empirical literature.

This stage proves critical to initial success with the problem analysis and project-planning phase of D&D. Considerable guidance is required to assist students in identifying areas that (a) are responsive to an emergent practice intervention concern in social work, (b) contain an identifiable gap in the knowledge base (methodological or substantive), and (c) can reasonably be addressed in the framework and timespan of completing the degree.

Students vary in the sophistication and preparation they bring to this process. Motivation and connections (for potential collaboration in the field) can sometimes compensate for weaknesses in prior training and experience, but at this point faculty must also be reasonable regarding students’ capacities to take on such comprehensive work. For some, a better plan may be to concentrate on skill building in the development of agency or field contacts for conducting future research (cf. Rothman, Teresa, & Erlich, 1994). For others, this process may be minimized in the interest of moving forward with interesting or timely projects as identified in the information synthesis above.

Before the third methods course, the student may take the first statistics course, and begin work on the research practicum. The practicum fits best with the D&D process when it serves as an opportunity for beginning phases three (intervention design) and four (early development and pilot testing) of D&D. Thomas observed that “single system designs lend themselves particularly well to examination of effectiveness with small samples of individuals or other systems in earlier stages of D&D” (1994, p. 278). Properly conceived, the practicum at this stage, sometimes complemented by an additional directed individual study (DIS) course, can provide considerable guidance on the feasibility of
the planned intervention. These projects can fill gaps in tools or methods needed to carry out subsequent formal evaluations, and provide feedback on refining subsequent intervention or research strategies.

The fourth (Assessment and Measurement in Social Work Research) and fifth (Advanced Research in Social Work) methods courses, complemented by the second statistics course, provide the student with tools needed for refining a dissertation prospectus and moving toward the fifth stage of D&D (evaluation and advanced development). Often in doctoral training, dissertators will attempt projects at this level without the experience or feedback gained from D&D steps described above. At this stage, integration of both substantive and methodological information gained through the preceding steps can be critical in an intelligent reappraisal of the original problem analysis and project planning phase.

The student (and supervising faculty) may, by this point, enjoy considerable momentum both in knowledge gain and in reality testing for the work to come. This may have very positive implications for assuring a positive context for executing the evaluation and advanced development phase (i.e., through solidified contacts with subjects or agencies now engaged and motivated to continue). D&D step 6 (dissemination), which follows through presentation and publication of work to date, may also be advantaged here.

Finally, the dissertation itself provides an opportunity for some component of the formal evaluation described above. While the costs and complications of randomized field trials are well known, the prospect of completing them, even on extremely limited budgets, should not be prematurely dismissed. In the section that follows, a series of empirical studies will illustrate the application of D&D and curricular components in the work of one doctoral student over a 3-year period.

**THE IMPACT OF MAHA MEDITATION ON PSYCHOSOCIAL FUNCTIONING**

As a source for research hypotheses, the second author, upon entering the social work doctoral program, was interested to explore the Vedic literatures from ancient India. The Vedas contain extensive theoretical expositions on social and psychological science, and they also describe practical interventions for social and personal difficulties. Some of these interventions are in use by mental health practitioners (Keefe, 1996). Thus, the Vedas represent a body of knowledge that is purportedly developed, accompanied by suggested approaches for utili-
zation of that knowledge. For a brief elaboration on cultural terms and concepts, see the Appendix.

As illustrated in Figure 1, the second author took the Assessment Methods course in his first doctoral semester. For his project in this course he psychometrically evaluated the basis of Vedic psychology and sociology, which is the personality typology of the three modes of nature, or gunas. According to the Vedas, all material, mental, and intellectual phenomena, including one’s personality, world view, and behaviors, can be categorized into three modes: sattva, or enlightenment, rajas, or activity, and tamas, or inertia (Prabhupada, 1976).

During the assessment course this classification scheme was assessed using modern psychometric methodologies, including the stages of operationalization, item development, data gathering, statistical analysis, and dissemination (Wolf, 1998; 1999). Analysis of the data from 619 subjects resulted in the Vedic Personality Inventory (VPI), a 56-item guna assessment scale that is being used in practice and research, including others’ dissertations. The VPI research provides evidence for the validity of the Vedic social science paradigm, and thus serves as empirical support for many potential research projects based on the Vedas. Development of the VPI constituted knowledge development in terms of the Rothman and Thomas (1994) model, and as a project unto itself it included many elements of the intervention design and development phase, including problem analysis and project planning, information gathering and synthesis, and publication.

Additional theoretical work on the Vedic perspective on mental health and social interventions was conducted in the Philosophies of Science and Theories and Models courses of the doctoral program. During the Theories and Models course the author developed and presented The Vedic Theory of Social Work, which delineated Vedic theories and interventions in terms of modern social science (Burrell & Morgan, 1979) and social work (Fischer, 1971) analytical models.

Broadly speaking, the second author’s research agenda was the empirical investigation of Vedic theory and practices based in that theory. To fully address such an agenda is clearly beyond the scope of a doctoral program, as the Vedas are a vast body of literature containing information about diverse fields of human endeavor, from psychology and physics to medicine, art and aeronautics (Goswami, 1977). Therefore, in the problem analysis and project planning phase it was necessary to narrow the issues to be addressed. This was done in consultation with the major professor.
Two general areas, social structure and individual practice, were identified for potential research, with both areas being based on the psychometric guna research that had already been done. Social structure refers to examination of a modern Vedic-based community in terms of the varna system of social division described in the Vedas, which is a vocational guidance paradigm derived from the three gunas. In the Research Issues in Direct Practice course, the second author conducted a systematic research synthesis, adhering to the framework of Klein and Bloom (1994), on spiritually-based communities with relation to career guidance. Individual practice refers to techniques delineated in the Vedas for enhanced mental health. He also did a systematic research synthesis on spiritually-based interventions, such as prayer and meditation. This synthesis became the basis of the Specialization Paper and the Literature Review and Synthesis chapter of the dissertation. These projects constitute the information gathering and synthesis phase in the design and development sequence of Rothman and Thomas (1994).

Based on the research synthesis, the authors determined that a timely community-based study would require a qualitative design, and that a study of the effectiveness of a technique on psychosocial functioning would call for a quantitative design. Given the realistic constraints of the doctoral program, it was decided that a time-limited series of outcome evaluations would be the more practical and potentially productive option.

The systematic research synthesis revealed that there had been no research conducted on the Hare Krishna Maha Mantra, a widely utilized mantra meditation technique described in the Vedas, including the Upanishads and Puranas, as a particularly important one (Prabhupada, 1972). One appealing aspect of studying the Maha Mantra was that it constituted a spiritually based intervention and, as such, represented an emerging practice concern in social work (Canda, 1988; Bullis, 1996). The major professor and student chose to begin examining the effects of the Maha Mantra with a single-system design, and, dependent on initial results, to proceed with a group study.

In the Theory, Design, and Problem Formulation course the second author developed ideas for research designs to study the Maha Mantra intervention. These ideas were solidified in the Advanced Research course, culminating in the final paper of that course which formed the basis of the Methodology chapters of the prospectus the dissertation.

To summarize, the Assessment Methods, Philosophies of Science, and Theories and Models courses contributed to the knowledge deve-
development phase of the intervention research model, and this work was incorporated as the foundation of the theoretical background chapter for the dissertation. The Research Issues in Direct Practice course and Specialization Paper involved detailed information gathering and literature synthesis, further refining the prospectus’ and dissertation’s first (introduction) and second (literature review and synthesis) chapters. Through research sequence courses in Theory, Design, and Problem Formulation and in Advanced Research in Social Work Practice, the second author developed the intervention design, corresponding with step three in the intervention design and development phase of the intervention research model, and leading to the dissertation’s third or methodology, chapter.

Phase four of intervention design and development is early development and pilot testing. Towards this goal the student, in collaboration with the major professor, designed a single-case design to study the effects of the Hare Krsna Maha Mantra. Within the context of a Directed Independent Study (DIS) course, the student implemented a single-system design with five subjects. With the chanting of the Maha Mantra as the independent variable, dependent variables, measured with standardized or self-rated instruments, included stress, depression, spirituality, well-being, life satisfaction, verbal aggressiveness, sattva, rajas, and tamas. To facilitate and refine the measurement of the gunas the second author conducted further research on the VPI as the content of his research practicum, resulting in a scale with stronger psychometrics.

Results of the single-system design, which were submitted and accepted for publication (Wolf, 1998), were sufficiently encouraging to warrant a more rigorous design to test the intervention. Data and experiences from the single-case experiment were evaluated, and a group design was formulated. This corresponds to the evaluation and advanced development phase of intervention design and development. Several elements of the group design, such as method of presenting the intervention to subjects, duration of the intervention, and selection of dependent variables, were adjusted in accord with findings from the single-system study.

Throughout this process, from initial development of the VPI to design of the group study, the second author closely consulted with experts and scholars of Vedic science and philosophy. This consultation was invaluable in several elements of research development, from formulating items for the guna scale to identifying potential dependent variables, consistent with Vedic theory, to be utilized in the Maha Mantra studies.
Evaluation of the single-system study resulted in the development of a 3-group design, with stress, depression, sattva, rajas, and tamas as the dependent variables. The groups included a Maha Mantra chanting group, a control group, and a group that chanted an alternative mantra with a syllabic pattern identical to that of the Maha Mantra. Subjects were self-selected through newspaper advertisements, randomly assigned to groups, and tested at pre-test, four weeks later at post-test, and four weeks after post-test at follow-up. This design, though requiring some cost, mostly in reimbursement of 62 subjects and a research assistant, involved reasonable expenditure of funds and investment of resources, and therefore it was practical for a doctoral student. Additionally, it allowed substantially more conclusiveness and generalizability than the pilot study due to its increased complexity. Of course, compromises in the group design were necessary, due to the exigencies of the doctoral program and logistical concerns. For example, a clinical sample would have been preferable to determine the practical significance of results, but this was not possible to obtain within the confines of the program due to the time necessary to acquire access to a clinical population. Also, a larger sample would have been beneficial, but financial limitations restricted the number of potential subjects. In addition, the researchers would have liked to track subjects for at least a year after follow-up testing, though time constraints did not allow this.

Data was analyzed using statistical knowledge gleaned from the two statistics courses required in the doctoral program, and through analytical methods acquired in consultation with committee members. Results provided validation of the Hare Krishna Maha Mantra as an effective technique for mental health intervention. Evaluation and discussion of the results formed the Results and Data Analysis and the Discussion chapters of the dissertation. This process of evaluation and discussion is consistent with the evaluation and advanced development element of the intervention design and development phase of the intervention research model, as the discussion included many suggestions for further research. These included recommendations for varying the duration of time spent chanting, adding a group that experiences an intervention known to be effective in treating stress and depression, and similar testing of other Vedic-based spiritual interventions.

A manuscript describing the results of the group design has been published in the social work literature (Wolf & Abell, in press), and reports on the research have also been published in Vedic-based publications. Reports from scholars and practitioners around the world who have heard and read about this research indicate that this intervention
research has been productively applied in helping people. As examples, a doctoral student at a prominent Indian university used the VPI as an effective measure of speech rehabilitation for stutterers, and a marriage and family counseling intern at an American university implemented the maha mantra, as prescribed in the dissertation study of the second author, with good results. Thus, in this instance, the intervention research model has served to address one goal of social work research by providing an organizational scheme for structured empirical studies encompassing several distinct, yet sometimes overlapping, phases.

**IMPLICATIONS FOR IMPLEMENTATION IN DOCTORAL EDUCATION**

Successfully integrating the considerable complexity of Rothman and Thomas’s (1994) D&D in doctoral education presents a challenge best approached with attention to several key concerns. First, a curriculum structure must be in place that balances the need for instruction and exposure to research methods with sufficient “hands on” opportunities to put those methods into practice. The model illustrated here allowed the student to progress through a series of learning steps from conceptualization through measurement, pilot testing, and formal evaluation. The agenda addressed provided for three separate experiences with a human subjects review board, further grounding the projects in reality, and exposing the student to external critique.

Second, faculty must be prepared (individually and collectively) to understand and guide students toward an integrative “long view” regarding the respectful integration of curricular goals and a substantive research agenda. Whether that agenda does (or does not) originate in the faculty member’s own research, he or she must understand the essential linkages between D&D phases, and be able to communicate the process successfully to the student. Structuring the experience for increased likelihood of intermittent rewards (i.e., conference presentations or publications) requires further skill, and can encourage students’ sustained motivation by demonstrating the external value of the works in progress.

Third, students will require both patience and stamina to link the D&D process with their evolving interests over time. In this regard, centering the work on issues intrinsically interesting to the student (rather than motivated by the convenience of attaching to a professor’s pre-existing agenda) can be particularly rewarding. In this respect, stu-
dents entering with refined notions of what they wish to study (and how) have an obvious advantage. When this momentum is lacking, faculty and student are challenged together to identify substantive issues of shared interest. The synergy stimulated by this process can have the added advantage of training the student in another of the D&D skills identified by Rothman and Thomas (1994): development of respectful collaborative relationships among both practice and research associates.

Resource concerns cannot be overlooked. While it is very important to appreciate (as illustrated here) that D&D can be accomplished with little or no external funding, this capacity would obviously vary with (a) the nature of the projects attempted and (b) the concomitant resources available to the student and faculty. Topics requiring extended access to subjects, data collection over long distances, or purchase of supplies, services, or support would demand funding or other sponsorship, or reconsideration as impractical. These issues are not insurmountable, but failure to strategize regarding them throughout the D&D process can quickly derail otherwise promising projects.

CONCLUSIONS

On balance, we have hoped here to demonstrate that a longstanding goal of the profession, building evidence for the effectiveness of social work practice through sound outcome research, can be incrementally advanced through a creative approach to doctoral education. Rothman and Thomas (1994) have given us a map which, when followed, provides a clear, though substantial and challenging, path toward improving our understanding of whether and why our efforts with clients succeed.

Adapting these objectives to varying doctoral curricula may generate challenges in articulation and conceptualization as much as, or more than, execution. How can existing courses be used or adapted to stimulate the learning required? How must faculty be supported or trained to guide students in moving from isolated projects to integrated agendas? Here, the “big picture” goal should be similar to that of the method being modeled. Intervention research attempts to shape and contribute to practice knowledge through careful attention to clearly identified methodological stages and roles. Following suit, applications in doctoral education should provide flexible structures maximizing opportunities to pilot, implement, and, most importantly, evaluate the benefits of novel interventions in social work practice.
REFERENCES


In Sanskrit “Veda” means “knowledge,” and the Vedas are a body of literature from ancient India that contain information on many spiritual and material subjects. According to the Vedas, the material world is made of the three modes of nature, or gunas. Our psycho-physical disposition consists of mixtures of the gunas (Prabhupada, 1972). For practical purposes, these notions are analogous to Western conceptualizations of psychological characteristics, and may be utilized in diagnosis or assessment, as well as the formulation of interventions.

Dasgupta (1961) describes the gunas as “the universal characteristics of all kinds of mental tendencies” (p. 468). Sattva guna is characterized by qualities such as cleanliness, truthfulness, gravity, dutifulness, detachment, discipline, mental equilibrium, contentment, sharp intelligence, sense control, and staunch determination. Dasgupta describes the sattvic quality as being “free from attachment and vanity and absolutely unruffled in success and failure” (p. 470). Attributes of rajas guna include intense activity, desire for sense gratification, little interest in spiritual elevation, dissatisfaction with one’s position, envy of others, and a materialistic mentality. The Bhagavad-Gita [18:24, p. 815] describes rajasic activity as “action performed with great effort by one seeking to gratify his desires, and enacted from a sense of false ego,” and a person predominated by rajas guna is described as “greedy, envious, impure, and moved by joy and sorrow” [18:27, p. 817].

Qualities associated with tamas guna include mental imbalance, anger, ignorance, arrogance, depression, laziness, procrastination, and a feeling of helplessness. Dasgupta (1961) explains that “the quality of tamas overcomes the illumination of knowledge and leads to many errors. Tamas, being a product of ignorance, blinds all living beings and binds them down with carelessness, idleness and sleep” (p. 462). In an applied sense, a person’s natural vocational tendency, or varna, may be determined by the mixture of gunas that predominate his or her consciousness.

Ontologically, the Vedas consider the self to be an irreducible, non-material, personal entity. This entity is covered by a subtle and gross material body. Mind, intelligence and false ego are the constituents of the subtle material body, and the gross elements are classified as earth, water, fire, air and space. Thinking, feeling and willing are the functions of the mind, and discernment is the purpose of intelligence. False ego links the self with the material sphere, and serves to delude the self into misidentifying with the material body. Due to the influence of the false ego, the self misidentifies with the body (Prabhupada, 1972).

There are many processes recommended in the Vedas for helping the self to become self-realized; that is, free of misconceptions, and positioned for optimal functioning and well-being. Many of these processes include chanting.
mantras. A mantra is a sound vibration that is designed to liberate the mind from material entanglement and to situate the self in its natural spiritual consciousness. The Hare Krishna Maha Mantra, considered the great chant for deliverance, consists of the sixteen words–Hare Krishna Hare Krishna Krishna Hare Hare Krishna Hare Hare Hare Rama Hare Rama Rama Rama Hare Hare. This mantra is especially recommended, in Vedas such as the Puranas (or histories) and the Upanisadas (a particularly philosophical section of the Vedas), for the current age, which is called the Kali-yuga (Prabhupada, 1972).