volume tells the reader something about *what* the dream experience may be, and something of timing and causes of reports, but it tells little about "why it is what it is." In the postscript his claims seem less. "If I have any particular hopes for this book, it is that it may have pointed out that the tools are increasingly available for the psychological investigation of sleep." The postscript also compares psychological with physiological research accomplishment concluding that "psychology's immediate past, present, and prospects for the future seem somewhat dim by comparison."

Both books are to be recommended, Foulkes's for an up to date account of the major area of interest in sleep by many psychologists, psychiatrists, and psychoanalysts; namely, *REM*s and dreaming. With so much attention we may expect useful findings, or alternately *REM* studies may suffer the fate, say, of the study of mental content through introspection. In the past, similar clusters of activity have generated a lot of heat and even some curiosity but have produced little if any solid scientific contribution. Murray's, by contrast, boldly and unapologetically throws out a full blown hypothesis well enough stated that it will be likely to stir theoretical debate and experimentation. The Murray book assumes that the reader possesses considerable technical sophistication but Foulkes beams his summary and interpretation to "the interested layman as well as the specialist." Both should be read with profit by the psychologist.

Virginia Military Institute DEAN FOSTER

*The Content Analysis of Dreams.* By CALVIN S. HALL and ROBERT L. VAN DE CASTLE. New York, Appleton-Century-Crofts, 1966. Pp. xi, 320. $7.00.

The authors, as is well known, are members of the Institute of Dream Research, and the preparation of this book was made possible by a grant from the National Institute of Mental Health of the United States Public Health Service. The authors propose that objective analysis of the manifest content of dreams will provide "one of the most powerful tools for comprehending the dynamics of human behavior." From such a source, and with such support, one looks into the book with considerable anticipation.

Hall's earlier papers on the conceptual theory of dreams (C. S. Hall, A cognitive theory of dreams, *J. gen. Psychol.,* 48, 1953, 169-186) were extremely interesting because they challenged psychoanalytic orthodoxy about dreams. The present work, however, only supports one's suspicion that Hall has taken all that is dynamic out of dreams and put nothing in its place.

In the reviewer's opinion, the book lets one see content analysis at its best, in all its technical aspects—the instructions, norms, and classifications are concise; they are constructive and methodically presented. It is said to be the most comprehensive as yet devised. The book begins with a testimony to the value of content analysis, a method which has many advocates and which has been put to excellent use in almost every humanistic field, in political theory, literature, history, biography, linguistics, folklore, and communication-theory, not to mention every branch of personality and psychotherapy research.

Hall and Van de Castle take the point of view that dreams are like plays on a stage, with settings, characters, and props. Actions occur, which may be classified as aggressive, friendly, sexual, successful and the like; and everything may have attributes such as color, size, density, temperature, velocity, and so on to qualify or modify it. The plays, however, have no plots; and most astonishing, the dreamer is

not allowed on this stage—any references to the dreamer, whether the *me,* or the *I,* or the *self,* are not in the plot. The system is said to be empirical, though three scales of a theoretical nature are included: they concern castration anxiety (*CA*), castration wish (*CW*) and penis envy (*PE*); oral activities—incorporation (*OI*), emphasis (*OE*); and regression (*RE*). These concessions to dynamic theory, however, are purely categorical: to dream that one "couldn't get his gun to work" is castration wish, and that one has a sword in one's hand is penis envy, in the manner of dreambooks.

The content is recorded on 5 × 8 in. cards, using letters of the alphabet such as we observe above (*CA, CW,* etc.).

In the opening chapter the authors argue, somewhat naïvely it must be said, for quantification of general applicability. Chapter 2 puts together some definitions: in particular, the manifest content of dreams, it is asserted, has "great psychological significance"—an assertion which might have had better support had the material of Chapter 15 been used for that purpose.

Chapter 3 defines the system, and from here to Chapter 13 all is a model of what content analysis as such, in its technical respects, can be. The classes are clearly described, the scoring system adequately illustrated, and all is concise and to the point. Norms, based on 1000 dreams of college students age 19 to 25 yr. are provided in Chapter 14, and these tables are almost all that one could desire. Chapter 15 reviews selected literature on scales of content analysis that have been used by others; Hall and Van de Castle might have done well to start their book with the substance of this chapter, because it provides at least some good reasons for using the manifest content of dreams, and categorical classes in the ancient manner of Aristotle, as basic to a certain kind of study of dreams. There are useful appendices, one listing all the objects and their frequencies, reported in the 1000 dreams. Another gives an example of scoring a dream series.

What, then, can be said of this book? Though the present reviewer is not averse to quantification, nor, does he undervalue content analysis, he is critical of certain of its trends. Indeed, he is of the opinion that some of the most significant contributions in certain fields of study owe everything to the method in empirical respects. What could be more compelling, for example, than the use of the method by Lasswell's school of thought to study the fate of the concept of 'democracy' in international politics over the period 1890 to 1940? What bothers the reviewer is its prodigious use to such little apparent affect.

Consider, for example, the norms. With regard to objects (p. 161), the norms indicate that men report implements more frequently than women, and that women report household articles and clothes more frequently than men. Nothing more significantly different is brought to light! This was also the case in the study by Griffith, Miyago, and Tago (R. M. Griffith, O. Miyago, and A. Tago, The universality of typical dreams: Japanese vs. Americans, *Amer. Anthropol.,* 1958, 60, 1173-1179) in which the only significant differences concerned *finding money,* and *killing someone.* Americans find more money than Japanese; American men report more killings in their dreams than American women, and conversely Japanese women report more killings than Japanese men. These are the only significant differences in a list of 34 items of manifest content of dreams. Hall and Van de Castle refer also to a study by Colby (see page 229) of 752 words as items of dream content. From 400 patients (200 men and 200 women) undergoing psychotherapy and from 400

students (200 men and 200 women), only seven words showed any significant difference (5% level of significance) between patients and students—men referred more to *vehicle, travel, auto,* and *hit,* and women more to *home* and *cry.*

There is no reason, perhaps, why one should expect a sex difference in the manifest content of dreams, but where a significant difference does emerge, it is surely evidence of broad cultural influences rather than of anything particular to dynamic theory of personality.

The outcome of all of this effort is no doubt of interest to someone. What it suggests to this reviewer is massive identities in the manifest content of dreams. No matter how one cuts the population-cake—into sex difference, social class, income-groups, or the like—significant differences in manifest content (when categorized in very broad or universal terms) are likely to be few and far between; and where differences appear they will rarely occasion much surprise. Moreover, we might go a step further and suggest that this will be the same with respect to what people read in the mass media, or look at in television, or what they talk about in everyday conversations. The concern is with the outward form of commonplace language, not in the sense of its style or grammar but in the sense that all "talk" can of course be categorized into settings, characters, props, activities, and attitudes as a matter of merely logical, not necessarily of psychological necessity. This is to say, then, that Hall and Van de Castle have made an empty cardboard model of every dream they analyze, with cardboard settings, cardboard characters, cardboard props, and all else—all drained completely of psychological and dynamic significances.

I am not sure how far I should take the above line of thought, because I am still puzzled about much else in Hall and Van de Castle's book. They altogether miss George's point about the uniqueness of some events in behavior (Chapter 1); and it is difficult to accept their assertion (page 21) that it is doubtful how far dreams really tap deeper levels of personality dynamics. To say (page 26) that in content analysis the system of classification "should grow out of the material and reflect its intrinsic nature" requires clarification as to what is to be regarded as intrinsic and what not. What is intrinsic in Hall and Van de Castle's case is apparently the Aristotelian categorization of things, persons, and events. The outcome, surely, speaks for itself. The truth is that content analysis in science can only be a test of synthetic propositions, that is, of a body of theory of some kind.

What, then, can be theoretical about dreams? It was to this question that I thought Hall was addressing himself in his earlier papers. For Hall is right, in my opinion, to challenge the Freudian standpoint that dreams are necessarily regressive, in the sense that, being fantasy, they substitute for painful emotions. The basic paper is Freud's own, on the "Relation of the Poet to Daydreaming." The contrast is between the real world of painful emotions and the "playworld" of daydreams, dreams, and perhaps of much else that we think of as real. For Freud, happy people have no need of fantasies—only the disatisfied do. This I find impossible to accept. Rather, when Pope wrote his "The Rape of the Lock," as when the Fuller Brush salesman of Hall and Van de Castle's book dreams of lecturing to a class of 30 eighteen-year old girls about the superior merits of hair brushes over nylon brushes, the fantasies may be pure fun, pure play, pure delight, pure serenity, pure self-striving and enjoyment. The days are surely over when concepts of pleasure can be left, theoretically, at the non-self, id-process levels of classical psychoanalysis. Dreams need a new looking-at in communication-pleasure terms, in relation to genuine

theories of play, not cardboard models of a stage, its settings, characters, and props. It is something of the kind I had expected from Hall following his provocative early papers. Might he not be encouraged to study dreams, by content analysis if need be, in genuine theoretical and not merely Aristotelian terms?

University of Missouri WILLIAM STEPHENSON

*Eye and Brain: The Psychology of Seeing.* By R. L. GREGORY. New York, McGraw-Hill, 1966. Pp. 251. $4.95.

Gregory's book on visual perception faces a dilemma common to books in this area. Basically, the summary and simplification necessary in a book aimed at the non-specialist are difficult simply because there are too many fundamental facts still missing from the field for safe theoretical generalizations. The author of a popular book on perception must therefore steer between the Scylla of presenting a series of interesting but unrelated phenomena and the Charybdis of making unwarranted assumptions about their interpretation and meaning. Probably no book for the general reader can be written which avoids one pitfall without risking the other. What course has Gregory navigated?

Gregory has avoided writing a book which would be simply a collection of visual demonstrations, uninterpreted and unconnected. The book, well written and strikingly illustrated, offers a definite point of view. It begins by introducing the reader to the pre-conditions of perception—the fundamental facts of the physics of light, the physiology and anatomy of the eye and the visual pathways, and the basic sensory relationships. A commendable feature of the book is that both psychological and physiological findings are presented in discussing the sensory functions of the eye. For Gregory, perception, however, is much more than the registering of patterns of stimulation. A percept is "a hypothesis suggested and tested by sensory data" (p. 12). A hypothesis-testing model of perception within the limitations established by the sensory systems serves as the theoretical orientation of the book. Much of the attraction of this book to the general reader resides in the varied application of this view. Hypothesis-testing in perception is related to the illusions to be experienced by astronauts in space where the visual system would lack essential information for veridical perception; reversible figures, such as the Necker cube, which give no clue as to their correct interpretation; impossible figures, which give contradictory information, and therefore allow no unique interpretation; and to the problems of the artist who cannot hope to provide on a canvas all the cues for depth present in reality.

The book relates perceptual phenomena to specific mechanisms as well as providing a general functional interpretation. The phenomena of the perception of movement are discussed in terms of the ways motion is signalled by the shift of images across the retinas and the rotation of the eyes in the head. These two signal systems provide the basis for explaining why the world remains fixed when we move our eyes, the autokinetic illusion, the waterfall illusion, and the phi phenomenon. Similarly, the Young-Helmholtz theory of color is used to integrate the facts about color vision and color blindness, and the visual illusions of size and direction are explained as resulting from the habits we have acquired in learning to perceive space accurately. In suggesting mechanisms for integrating diverse perceptual phenomena, Gregory is aware of the complexity of the problems and that the limitations of the models proposed are soon reached. He points out that the image-retina and eye-head mechanisms can not account for the illusory perceptions of