

FRUSTRATION AND READING PROBLEMS

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Introduction

The presence of frustration-produced anxiety in varying degrees as a concomitant effect of reading disability has been amply documented. Bryant(1962) has noted anxiety as one of the underlying causes of the "almost universal" presence of emotional difficulties in reading disorders.

Anxiety manifests itself in myriad ways, some subtle(as in the child who develops avoidance behaviors, or persists in letter and word confusions and reversals), and some more obvious (as in children who have temper tantrums, become overtly aggressive, or soil themselves during reading instruction). And yet in the face of this general agreement there have been few attempts to relate the two, frustration and reading problems, in any but an indirect, contributory manner. Hilgard's(1967,p.514) statement is typical of the prevailing view, "The persistence of difficulties in arithmetic, reading, and spelling among some bright children (and some adults) may be explained in part as a consequence of errors similarly stereotyped by early frustration."

It has become apparent to me that it is possible, perhaps even probable, that the relationship between frustration and reading problems is less indirect than it has been perceived to be. The discussion which follows will indicate the marked similarity in behaviors between animal and human subjects who have been frustrated, and children and adults who have been labeled as cases of reading disability. Observation of these similarities indicates the possibility of a more direct link between the two and may serve to explain why therapy, as Eisenberg(1962, p.6) has noted, "is most often a painfully slow process with small gains despite large efforts, and at times there is unfortunately no visible gain at all."

It is hoped that further investigations will be encouraged by demonstration of the striking likenesses in behaviors manifested by both animals and humans placed in persistent, no-escape, frustration situations, and in children with apparently intractable reading problems, who may well view continuing but unsuccessful efforts at instruction as persistent, no-escape frustration situations.

Experimental Neurosis

Pavlov(1928) and his associates were among the first to observe and identify the phenomenon of abnormal, deviant behaviors when both animal and human subjects were faced with problem-solving situations which demanded a response in the absence of alternative opportunities for escape.

These deviations were initially noted during laboratory experiments involved with conditioning reflexes in animals. Dogs were conditioned to salivate to stimuli such as visual objects, light flashes,

or bells, by following the presentation of such stimuli with food. The unconditioned stimulus (the food) normally produced a salivation, and in time the conditioned stimulus which preceded it elicited the same conditioned response even in the absence of food.

During one experiment, in which a dog was being trained to demonstrate a "differential conditioned response" to a circle and not to an ellipse, examiners observed a deviation when the animal was pressed to perform beyond its coping abilities. The dog learned to make the desired salivary responses upon viewing the desired geometric form as long as the differential was marked. When the differential between the two figures reached a ratio of 8 to 7 however, the animal gave evidence of trouble in making the more difficult differentiation, as indicated by obvious behavioral changes.

When the differential reached 9 to 8, the animal was reported to have "broken down." His ability to differentiate deteriorated over a three week period during which time he gradually lost control and salivated to any visual stimulus incidental to the experimental situation. His behavior also underwent marked change and he squealed, barked, and bit at the harness holding him. In time the dog was tested with a simpler, more marked differential between the circle and the ellipse and was unable to make formerly well-established discriminations. Pavlov termed this deviation in behavior "experimental neurosis."

In a similar experiment with a human subject, the same type of behavior deviation was observed when the test situation demanded responses beyond the subject's coping capacity. A young child was conditioned to make a differentiated response to the slower of two metronome beats in a differential of 92 to 144. His behavior during the test situation remained satisfactory while the differential was being decreased until the difference reached 120 to 144. At this point the child began to show signs of tensions and dislike for the laboratory. When the differential reached 132 to 144 the child, like the animal, is reported to have "broken down." He became agitated, disobedient, and even went to sleep. When again presented with a differentiated beat of 120 to 144, he was no longer able to make the correct response. His reaction was also designated as "experimental neurosis," caused by the stress of the test situation.

Abnormal Fixation

Maier (1961), in later experiments with rats, observed behavior markedly similar to that noted by Pavlov when Maier's experimental animals were placed in no-escape situations and forced to respond. Maier used these earlier findings to support his theory of a separate frustration mechanism which he postulated became operative when an organism was persistently required to respond to an insoluble problem. He viewed the deviant behaviors observed in such situations as being more than simply deviations from the norm, but rather a class of behaviors in and of itself. He held that such behavior was induced by the stress created in the frustrating situation from which the subject could find no other avenue of escape. Maier regarded this mechanism to be a form of perceptual defense against impossible demands placed upon the organism's

coping capacities.

Maier perceived normal behavior to be "motivation behavior" which he defined as the "process by which the expression of behavior is determined or its future expression is influenced by consequences to which such behavior leads." (p.93) His research, however, led him to define frustration behavior as being different not only in degree but in kind, and he characterized frustration behavior as the "process whereby the selection of behavior is determined by forces other than goals or mere neural connections." (p.93)

When he analyzed his findings of the development of stereotypic reactions in animals, a development he designated as "abnormal fixation," he observed a common element in his subject's behavior "which seemed not to be demanded by the motivating and learning conditions of the test situation, and which at the same time seemed to be caused by the test situation. In addition, the behavior expressed seemed to be out of character with the animal's normal behavior. To the extent that this observation is sound, it is in conflict with the traditional view that a neurosis is a kind of deviation from the normal behavior in degree rather than in kind." (p.140)

Kirk (1962) has described one of Maier's experiments with a rat population in which he "presented the animals with no-solution problems, using a Lashley jumping apparatus in which, under learning situations, the rat would learn to jump off a stand to a black or white card. One of the cards would be locked in position, the other unlocked and easily pushed over. When the rat jumped to the unlocked card it fell over and he obtained food. Under normal conditions the rat learned to jump at the appropriate card, black or white, as the cards were irregularly alternated. The rat was able to choose consistently the card that was unlocked, whether it was on the right of the screen or the left. In the frustration experiments, the symbols, black and white, were alternated in such a way that learning was impossible, for the white card was locked sometimes and the black at others. In these experiments the rat often developed a position stereotype. He began to jump always to the right or always to the left. Some rats developed a stereotype of jumping to the same symbol in spite of the lack of reward. Maier termed these responses abnormal fixations." (p.334)

In the experimental situation, Maier established as a criterion for abnormal fixation the persistence of an unadaptive response for 200 trials when the possibility of adaptive choice behavior was present. Thus, stereotypic behavior was defined as persistent maladaptive behavior in spite of the presence of more satisfying choices. He indicated his belief that this type of behavior is contradictory, for "learned behavior is subject to change when it ceases to be adequate for obtaining a goal, yet frustrated behavior shows resistance to change." He cited the occurrence of similar fixated behavior in humans when presented with no-solution problems: "Human subjects were similarly caused to develop a degree of rigidity to change. The rigidity in behavior was measured by a greatly retarded ability to learn in a situation that had been previously frustrating. Thus, after frustration, human beings have difficulty in learning simple discrimination problems." (p.82)

Behavioral Regression And Primitivation

Postman and Bruner (1948, pp. 314-315) in discussing the effects of stress on perception stated:

If perceiving is indeed considered a form of goal-directed behavior, the frustration of perceptual responses should have predictable consequences. The consequences of frustration are, to be sure, manifold. But one important consequence, highly predictable in the light of recent research, is the disruption of behavior following the thwarting of goal-directed activity - behavioral regression and primitivation.

Like all goal-directed activity, perceptual behavior is sometimes blocked by obstacles - one fails to perceive for one reason or another, what is necessary or important in a situation and thereby fails to adjust. Inevitably there is perceptual frustration just as there is frustration of other instrumental and consumatory acts. In the face of thwarting, the organism's energies may be canalized into either need-persistent and adjustment attempts to get his goal or behavior may be subordinated to the service of direct or displaced aggression or simply "go to pieces." Are comparable reactions to be found when perception suffers frustration? The organism may show reaction in several spheres. He may, and there is evidence that he does, accentuate his perceptual field differently. The sequence of hypotheses so necessary in perceiving new stimulus situations may finally be seriously disrupted.

In their experiments, Postman and Bruner proceeded deviously to frustrate and thus heighten anxiety in a group of highly intelligent, well-educated adults and then test them in a situation which appeared to the subjects to have no escape other than to make persistent responses. They were then shown words tachistoscopically in groups of one, two and three words, at viewing levels previously indicated as being acceptable to the subjects. The results were responses which gave evidence of regression, primitivation, and aggression and demonstrated how the perceptual field may well be accentuated differently in persistent, frustrating, no-escape situations. (See Table I) It is interesting to note that these examples of maladaptive accentuation of the perceptual field under stress, bear a remarkable similarity to the errors disabled readers might be apt to make when shown these same words in the normal reading situation.

Postman and Bruner further observed that persistence in maladaptive behavior is a form of adjustment behavior enabling the organism to cope with its environment and the demands placed upon it. "Man is perpetually prepared for 'eingestellt' in one way or another and what he sees at any moment is a resultant of his preparedness and of the nature of the stimulation bombarding him. He learns to eliminate from his perceptual field what is extraneous to him and to encompass what is important, even to the extent of occasionally 'seeing things that aren't there.' In a very real sense perception is the first line of defense

against would-be catastrophic situations and a sensitizer to adaptive opportunities." (p.314)

TABLE I

Examples of responses given by the subjects in Postman and Bruner's study of perception under stressful conditions, quoted in text.

<u>Stimulus Words</u>	<u>Response Words</u>
praise	perish
sacred	screamed
rust	hurt-bust-burst
swords rust	keep silent
tests much	treat rough
praise hardy deeds	foolish hard doing
	what money deeds
tests show much	th... shoo rough

Developmental Aphasia

Eisenson (1968, pp.9-10), in speaking of the condition termed developmental aphasia, implies that this condition also results from an inability of the affected organism to develop consistent meaning from the environmental sounds which are bombarding him, thus providing a persistent, no-escape, frustrating situation. He says:

In the related processes of reception and perception, the individual is required to take into account new evidence related to the information provided by the signals to which he has already made responses. As he continues to receive information, the responding individual narrows the mathematical possibilities as to the nature of the succeeding signal. At some point he determines that he will commit himself about the likelihood of a given signal - auditory or visual, a phoneme or grapheme, or a sequence of phonemes or graphemes. The commitment he makes is essentially that the signal is in fact what he anticipated that it should be and predicted that it is. If his guess is confirmed by the linguistic events that follow, he continues his involvement in the language game.

Non-verbal children in general, and aphasic children in particular, are impaired in their ability to deal with linguistic sequences. They are poor at the guessing game and the gambling which are inherent and required for becoming proficient in verbal behavior. The developmentally aphasic child is so poor, so apt to be a born loser, that he may become apprehensive about exposing himself to situations that require him to be involved in continued trials, and tries to understand and pronounce conventional language. His negative attitude toward language may be maintained even when his nervous system and his potential for

improved perceptual functioning may have matured sufficiently so that the odds, and the likelihood that he can become involved in the language game and develop verbal behavior may finally be in his favor.

Eisenson also indicates the processes involved when the frustration is so severe as to threaten the individual's capacity for coping with his environment, as being extremely resistant to removal. He finds the aphasic condition itself may constitute a kind of "perceptual defense" (in this case a negative adaptation) mobilized against impossible environmental demands, subsequently requiring therapeutic "enticement" before the organism's normal capacity for learning can be reinstated.

Maier offers an explanation very similar to that of Postman and Bruner in developing his view of the organism's ability to persist in maladaptive behaviors. He also perceives of them as a form of adjustment, bringing to the organism a modicum of relief from the frustrating situation by providing an active means of response. In his experiments, he found that persistently forcing the animals to jump from the experimental apparatus into a frustrating, non-soluble situation frequently resulted in the appearance of seizures in the experimental animals. However, once they had developed stereotypic, albeit maladaptive behavioral responses, "the fixated group showed a falling off in seizures as the testing period continued, whereas the non-fixated group showed no such trend. It appears that the fixated group develops some kind of adjustment to the situation and is thereby able to prevent emotional tensions that terminate in a seizure. It seems that the persistent position response (fixation) gives the animal a mode of behaving in the conflict situation. The fact that resistance to jumping in the insoluble problem declines when consistent position responses appear, supports this view." (p.50)

Reading Problems As A Source Of Stress

That persistent frustration is a significant cause of severe anxiety reactions is generally accepted by all the disciplines concerned with the effects of these reactions. That it is equally a factor of great significance in reading problems is likewise accepted by those in the field as indicated by Eisenberg (1966,p.12) who states that failure to learn to read "is in itself a potent source of emotional stress."

It is difficult to avoid noting the marked similarity of behaviors reported in the research in the general area of frustration, and the behaviors manifested by subjects with reading problems.

Typical of these behaviors are those mentioned earlier by Hilgard as "persisting as a consequence of errors stereotyped by early frustration." Rabinovitch (1962,p.78) also notes that children

often bright, perceptive, and sensitive, tend to react successively with anger, guilt feelings, depression, and finally, resignation, and compromise with their hopes and aspirations. Loretta Bender

has pointed out interesting parallels between children with severe reading disability and with schizophrenia. While the core problems are very different, their sense of uncertainty about their world may be common. The schizophrenic child, because of poorly defined ego boundaries, has this uncertainty. The dyslexic child may be similarly perplexed and lost because of his inability to deal with symbols, the language of his world. The fact that he appears normal, and is so except in the one area of his deficiency, compounds his problem.

In discussing the reading disabled individual as being apparently normal- "except in the area of his deficiency" - Rabinovitch emphasizes another facet of the overall problem of reading disability about which there is general agreement in the field. Research tends to support the conclusion that the two populations, children with reading problems and those without marked reading problems, are generally viewed as being comparable populations outside of their ability to cope with language symbols.

Associated Characteristics Of Reading Disability

Bryant (1965) in attempting to characterize the condition of dyslexia, or severe reading disability, noted hyperactivity, distractibility, visual anomalies, associative learning problems, directional confusion, inferior motor development, delayed or accelerated physical development, memory deficit, temporal and spatial disorientation, inadequate concept development, disturbance in Gestalt functioning, borderline EEG, and perceptual and discrimination difficulties, as being among the characteristics that appear with greater than normal frequency among dyslexic children. He referred to them as "associated characteristics." However, after an extensive explanation of these behavior manifestations, he states that they are the same as those "normally seen in children just beginning to read but (there) they are rapidly overcome without help." (p.197) Bryant concludes that the child with severe disability differs most significantly from the normal child in that his faulty responses to early language experiences have not been "rapidly overcome without special help" but have instead become stereotyped. He states that the dyslexic child

... persists in these characteristics as he grows older. Improvement with age in a dyslexic boy who has not been helped by years of remediation may reflect maturation. However, in addition, it may also reflect the fact that remedial procedures often confuse and obscure the very learning they are attempting to bring about. As he grows older, a child with moderate dyslexia may develop considerable reading ability, even though he is still far behind his age-mates. His recognition of familiar words increases, but his errors in reading are likely to reflect the same characteristics described. While his reading may be at a fourth-grade level, most of his errors are likely to be simple ones, more typical of the reading performance of a child reading at first- or

second-grade level. Simple words are correctly identified in one sentence and incorrectly recognized in a later one because of poor differentiation of details within words. Vowel sounds are inconsistent if the word is the least bit unfamiliar and reversals of letters (and sometimes words or word parts) are still frequent.

Eisenberg (1962) further supports this conclusion and indicates that the condition he terms "specific dyslexia" is diagnosed when "a child is unable to learn to read with proper facility despite normal intelligence, intact senses, proper instruction, and normal motivation!"

Implications

Frostig and Horne (1964), among others, have done considerable research in recent years tending to indicate perceptual disturbance as the major factor of differentiation in the incidence of reading problems in the disabled population, but this research has not as yet uncovered convincing causal relationships. The question as to why this segment of the overall population should experience perceptual disturbance without any measurable deficit not similarly present in the normal population remains to be answered. Rabinovitch (1962, p.78) has concluded that "The problem does not seem to be one of perception per se, but rather in the translation of perceptions into meaningful symbols that can be used in reading and related language functions."

What is being suggested here is that the factor of frustration and the resulting anxiety produced may be a significant factor inhibiting the organism in its "translation of perceptions into meaningful symbols that can be used in reading and related language functions." In view of the evidence regarding the capacity of persistent frustration to cause normal subjects to "break down" and to "go to pieces," it seems eminently possible that persistent frustration could well be among the factors causing the normal child to "accentuate his perceptual field differently" during the initial period of development of decoding and encoding skills. Such frustration would, as Postman and Bruner indicate, interrupt the "sequence of hypotheses so necessary in perceiving new stimulus situations."

As Maier has indicated, frustration behavior is characterized by its unpredictability which seems "not to be demanded by the motivating and learning conditions of the test situation, but which at the same time seems to be caused by the test situation." Such a description is simultaneously a most suitable explanation and a characterization of the behaviors manifested by the average case of reading disability. In such a case, the child's behaviors are indeed most unpredictable, and the normally bright child will persist in making inexplicable errors (frequently for years), and "Simple words are correctly identified in one sentence and incorrectly identified in a later one because of poor differentiation of details within words."

Hebb (pp.35-37) stated, in view of the research evidence, including that of Broadbent (1962), and Reisen (1947), which fully confirmed his theories, that a "perception of square or circle is slowly learned and depends originally on multiple fixations" and that "perception of even a simple object involves a 'phase sequence.' This is a chain of cortical events with motor links. Although the motor activations may only be subliminal and do not always produce overt response, the role is essential in any perception."

More recently, Fristig and Horne (1964,p.50) have supported this view of the complex nature of the perceptual act. "The fact that the different parts perceived in relation to each other are not actually perceived simultaneously but in temporal sequence and integrated step by step into a total picture seems insignificant in training the ability to perceive spatial relationships. A sequence of eye movements is involved in the perception of even the simplest geometric figures. This sequential integrating process, which is sometimes referred to as pattern vision, is usually so swift that the perceiver seems to experience all the steps simultaneously."

Consider the possibility for confusion arising from the visual similarity among and between these groups of letters: b-d-p-q-g, f-t, h-y, x-v-w-y, h-n-r, and n-u-w-m; or from the auditory similarity between the sounds heard when the mouth emits the following letter sounds: f-v-th, s-sh-ch, tr-ch, dr-jr, b-p-d-t, m-n, or the medial vowel sound in sit-set-sat, pin-pen-pan. Observe the potential for confusion when the cognitive system is required to differentiate, associate, and remember what is seen, heard, and printed in words involving the appearance of the visual or auditory symbol associated with the letter a, as in at-ate-eight-caught-rare-pear-fear-bread-saw-taught-laugh; or with the letter u, as in us-use-about-abut-lung-among-fur-shirt-word-queen-flute-boot-fruit-mule-few-through-though-thought-threw-blue-shoe, etc. When meaning is totally dependent on the exact sequence of either the visual or auditory elements comprising the whole, as in saw-was, left-felt, plane-panel, could-cloud, thin-tiny, spin-snip-nips-pins, casual-causal, etc., the potential for error is virtually, if not literally, infinite.

If, however, the person or persons responsible for planning instruction have studied the structure of the English language, most of this confusion can be eliminated. Some of the difficulties are in the auditory-speech field; some are visual. This is the first classification which must be made. Next, within each category are logical patterns - phonemic (sound) and graphemic (print) - which can be presented in controlled sequences for learning and retention. The learning process needs to be facilitated by intrasensory practice and intersensory (visual, auditory, kinesthetic-speech and kinesthetic-motor) reinforcement.

Such an approach would go a long way toward taking advantage of linguistic readiness already present. It would advance perceptual and cognitive development at the outset. In the case of the disabled older student, it would provide an escape route from paralyzing frustration with its persistence of maladaptive responses.

Conclusions

Although the initial stages of learning to read have long been understood to be important in their total effect on the development of reading ability, those understandings were based upon inadequate knowledge. It is clear that the complex nature of the reading act makes it obligatory that past and present instructional practices be re-examined in light of the knowledge constantly accumulating from related disciplines. It is possible that educators and theorists have indeed underestimated the complexity and long range impact of initial experiences with language symbols. And further, that by exposing children to visual, auditory and kinesthetic perceptual experiences without assurance of prior development of adequate "perceptual readiness," they may have unwittingly set in motion the kind of frustration responses shown to occur when problems appear to subjects to be insoluble and from which there is virtually no escape, except in the development of deviant and even fixated behaviors.

When one considers the potential for the commission of error due to faulty or immature perceptual development, uncorrected by cognitive organization, most significantly during the early stages of exposure to symbols in the school, the magnitude and complexity of the resulting problem of reading difficulty becomes more understandable. The child's ability to perceive, in the sense that perception involves the processes of sequence, association, memory, and discrimination, can be considered almost primitive with regard to abstract alphabetic symbols.

Even a cursory examination of the available possibilities for visual, auditory and kinesthetic misinterpretation of randomly presented letter and word symbols, because of the nature of our ambiguous alphabetic medium, gives immediate credence to the relationships discussed in this paper between reading problems and the existence of responses shown to occur when problems appear to subjects to be insoluble and from where there is virtually no escape except in the development of deviant and even fixated behaviors.

In sum, the observed behaviors, heavily documented in the research on frustration, which have the capacity to cause subjects to "break down" and "go to pieces" appear to have obvious similarity to those behaviors observed in disabled readers, especially as they grow older. Further investigation of this phenomenon may offer new and positive direction to those interested in both the treatment and prevention of reading disorders.

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