

# Intrinsic Motivation vs. Extrinsic Rewards



## IN VISION THERAPY & LEARNING

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### Abstract

*This article is a critical review of the principle that the most effective way of modifying behavior is by providing extrinsic rewards, the so-called token economy used by many behavioral optometrists. Because many of the patients present with a myriad of visually-related reading and learning problems, the management of these problems often transcends solely improving visual skills, per se. We must be equally concerned with the process used to administer visual therapy so that young patients, formerly frustrated by failure, will have learned to appreciate their increasing mastery of the skills that they will be acquiring in school. Through their experiences as patients in vision therapy, they should become sensitive to the cognitive characteristics associated with good learners. Extrinsic rewards, alone, do not provide these opportunities.*

### Key Words

*intrinsic motivation, extrinsic rewards, operant conditioning, vision therapy*

In the optometric treatment of children, do the clinical practices that may be traced directly to Skinnerian theory<sup>1</sup> really generate the kind of changes in behavior that we are hoping for? Or have we accepted that the principle "Do this and you will get that" will lead an individual to do "this" again, but without sufficient concern on our part for the consequences? Perhaps we continue to embrace this doctrine of reward solely because it is almost a century since Thorndike<sup>2</sup> formulated the Law of Effect and proposed that positive experiences in animals are likely to be repeated. We have been marinated in these beliefs for three generations.

Kohn<sup>3</sup> in his scholarly analysis of operant conditioning and reinforcement described Skinner as a man who conducted most of his experiments on rodents and pigeons and wrote most of his books about people. Perhaps it is time that we ask ourselves some very cogent questions. *For example, although rewards may be effective at producing compliance in the short term, are there negative effects over longer periods of time?* If started early enough and continued long enough, can rewards become an addiction? Is this extrinsic approach consistent with the tenets of behavioral optometry? Do we not have a professional commitment to develop intrinsic motivation so that we can cultivate skills such as attention, perseverance, effort and self-direction, especially in those children who have been identified as reading- and learning-disabled?

When discussing the consequences of using extrinsic rewards to mold (control?) behavior, further questions arise, not all of which have simple answers. For example,

should rewards be based on the amount of effort that is expended while trying to succeed regardless of the outcome? Or should only successful outcomes be rewarded? Who, then, would define the standard for success? Since success may be a cooperative effort that could result from prior or collaborative efforts of other individuals, who deserves the reward? How is the "market value" of each task measured? *Finally, is it our intent when treating a child to convey the notion that learning is something that one does in return for a prize?*

I propose that it is more desirable to develop intrinsic motivation by teaching the reading- and learning-disabled child to recognize his/her increasing mastery of the skills that have been attained. This kind of reinforcement results in the self-gratification and emotional growth that can be transferred and generalized to new situations in school and in life.<sup>4</sup> Using Piagetian phraseology, intrinsic motivation is a basic drive that evolves from the needs of children to "nourish" their cognitive schematas (i.e., intellect) to ensure their continued functioning.<sup>5</sup> Self-determination, competence, task involvement, curiosity, enjoyment and interest are other major elements of intrinsic motivation. Prominent components of extrinsic motivation include concerns with competition, evaluation, recognition, money or other tangible incentives, and constraint by others.<sup>6</sup>

The efficacy of using extrinsic rewards to alter behavior has been the subject of experimental scrutiny. Kazdin<sup>7,8</sup> reported in his first study that reinforcement programs used each morning didn't have much effect on behavior in the afternoon.

Ten years later, he reported that behavioral gains are likely to be lost in varying degrees once the client leaves the program. Several other investigators have questioned the long-term effectiveness of token economy and observed that the behavior doesn't transfer to new situations.<sup>9-12</sup> In another study<sup>13</sup> a group of 4th and 5th graders were rewarded for playing certain math games, but not with others. When the rewards were announced, many of the children gravitated to the games that involved a reward. After the rewards were withdrawn, their interest in those games dwindled to the extent that they were less interested in them than were the control group who had not received any rewards. Colvin<sup>14</sup> found similar results involving children's choice of different art media. Kohn<sup>3</sup> concluded: "Reinforcements do not generally alter the attitudes and emotional commitments that underlie our behaviors. They do not make deep lasting changes because they are aimed at affecting only what we do." (p.41)

Do rewards improve performance? Studies conducted by various investigators do not lend support to the notion that rewards improve performance. When asked to select a pattern on each page that was least like two other patterns, undergraduate students who were not offered money performed significantly better than those who were paid, even after doubling the reward.<sup>15</sup> College students who were writing headlines for their school newspaper showed improvement in their skills over time. When some students were paid for each headline, their performance stopped improving, while the unrewarded group continued to improve.<sup>16</sup> High school students were given five different tasks, some testing memory, others requiring creativity. Some were promised rewards. Regardless of the task, the rewarded students did not do as well.<sup>17</sup> Many other studies that involve subjects from preschool to college replicate these results.<sup>18-20</sup> However, if, in addition to the extrinsic reward, a child who was receiving vision therapy were to keep a chart, for example, of the improvement in nearpoint of convergence or visual processing skills, s/he would become increasingly aware of the mastery of the task. This would be the first step in developing intrinsic motivation.

There seems to be some consensus about the nature of tasks that do and do not respond to rewards. Rewards are least ef-

fective when they are offered for doing things that are optimally challenging for the subjects.<sup>21</sup> McGraw<sup>22</sup> concluded that incentives will have a detrimental effect on performance when two conditions are met: first when the task is interesting enough for subjects that the offer of incentives is a superfluous source of motivation; second, when the solution to the task is open-ended enough that the steps leading to a solution are not immediately obvious. Rewards are most effective in improving performance only at simple, non-cognitive tasks, and even then they improve only quantitative performance. For example, expecting a reward could serve as an incentive for a child to remember to bring his homework book home, to sit still in vision therapy for a short time, or to lick envelopes faster. Therefore, one must be careful not to indulge in response overgeneralization.

At the very least, the use of extrinsic rewards ignores the antecedents of a problem. That is, behaviorists do not address the reasons why the child failed to participate fully in the first place. The reason why the child is not doing his homework or not attending in the vision therapy session does not seem to be of primary importance. Therefore, even when a program is "successful," the real problem remains unsolved. Rewards motivate individuals to get rewards, but they tend to mask the actual cause of the difficulty.

Behaviorists have not accepted the concept that rewards can undermine performance. However, their studies that have been conducted to show otherwise are sparse and their N's are usually small.<sup>23-25</sup> None of these studies had a control group in which subjects engaged in the activity without being rewarded for the sake of comparison. Nevertheless, behaviorists reject the view that the development of intrinsic motivation in individuals is undermined by rewards.

Although some behavioral optometrists engage solely in extrinsic motivation, it should be emphasized that intrinsic and extrinsic motivation are not always mutually exclusive. Others use extrinsic rewards to prepare the patient for the development of intrinsic motivation. The two techniques do not necessarily represent a strict dichotomy. Intrinsic motivation has been defined as the desire to engage in an activity for its own sake—just because of the satisfaction it provides

the individual.<sup>26</sup> In this more cognitively based approach, the "bottom line" becomes less important, although we can never be completely insensitive to the consequences (i.e., the product) of what we are doing.<sup>27</sup> Kohn<sup>3</sup> suggests that satisfaction in doing is different from satisfaction in having done, but both might be reasonably classified as intrinsic.

Not all of the questions raised earlier have been answered. We are dealing with two opposing concepts. The intrinsic approach is cognitive, abstract, and long-term, while the extrinsic is very concrete and short-term. It is the responsibility of the behavioral optometrist, in the course of vision therapy, to arrange the conditions that will provide the child not only with the necessary visual and perceptual skills but also with the opportunity to develop cognitive characteristics associated with intrinsic motivation. They are the same attributes that are found in achieving students: attention, perseverance, effort, and self-direction. Tasks must be challenging enough to motivate, but within the child's developmental framework so that the potential to succeed is available. These conditions will help to satisfy the child's need to know. Vision and perceptual therapy should encourage the child to be pleased with his own accomplishments and recognize that higher level functioning is its own reward.<sup>28</sup> Such an approach can be generalized and transferred to a plethora of learning situations and still leave some room for the moderate use of extrinsic incentives in special cases. But, even in these cases, the ultimate goal always should be the enhancement of intrinsic motivation.

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