

THE STEREOSCOPE: A NEW
FRONTIER IN PSYCHOLOGICAL RESEARCH¹

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Long before the advent of television, a small, innocent looking inexpensive device consisting of two prisms, a movable slideholder and a long wooden shaft, served the same purpose as does the Magic Screen today. Our grandparents might even have legitimately worried about the "influence of the stereoscope on children," because many youngsters of two generations or so ago spent long hours watching in fascination as two seemingly identical pictures -- one viewed with the left eye and the other with the right -- appeared to merge into a convincingly three-dimensional landscape or bridge or building or sparsely attired girl. Of course, a close examination would reveal that the two pictures in the stereoscope were not really completely identical, but that one was slightly shifted in relation to the other. In this fashion, the stereoscope duplicated the process whereby we ordinarily attain perspective by combining the slightly different "flat" images obtained by the left and right eyes.

The same stereoscope which amused our progenitors by creating three dimensions out of two has recently made a comeback in a different role -- as a psychological research tool. We have discovered that we can use the stereoscope for -- among other things -- gauging the impact of past experiences or personal needs on perception. A number of experiments already show that there are many implications and applications in this line of work. One of these applications is the use of the stereoscope for research into problems related to crime and delinquency.

Current work with the stereoscope started some seven or eight years ago with a series of ingenious experiments by Edward Engel. Engel was interested in what would occur if one viewed two entirely different pictures with the left and right eye. He found that if one of the two pictures was more conventional, or more in line with past experience than the other, it might get "preferential treatment." For instance, when a portrait of a Princeton football player was presented "right side up" to one eye and "upside down" to the other, the "right side up" face was typically the only one perceived (Engel, 1956). Personal preferences also seemed able to determine what might be seen. If we show our football player to the left eye, for instance, but view one of his teammates with the right eye (both "right side up"), we may find ourselves looking at a "fused" face -- an athletic looking young man whom we prefer to either of the original pictures (Engel, 1958). This preference is easy

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to understand when we remember that the picture we see with both eyes is made up of elements selected out of the monocular pictures -- in part, to suit our taste.

Engel's findings have led to a variety of experiments using the stereoscopic technique. Bagby (1957), for instance, found that when a typically "Mexican" scene (such as a bullfight) is shown to one eye and a comparable "American" scene (like a baseball game) to the other, Mexican observers will tend to see the Mexican pictures while matched American subjects report the images more familiar to them.

In another type of experiments, Beloff and Beloff (1959) showed that when people construct a "composite" face out of two different portraits (as in the case of Engel's football players) the result is most pleasing to them when one of the pictures is their own. A third illustration of stereoscopic research is a recent project in which South Africans were presented with faces of White, Indian, and Negro persons in various combinations. Prejudiced observers failed to "integrate" these pairs, while unprejudiced observers obtained suitable ethnic mixtures (Pettigrew, Allport, and Barnett, 1958).

Our own work with the stereoscope has led us to explore applications of the method to the areas of law enforcement and correction. We have made up and used stereoscopic slides in which one eye is presented with a scene featuring violence (such as a person being stabbed or a car being broken into), while the other eye is faced with a relatively innocuous, peaceful or "neutral" picture (such as a farmer plowing a field or a workman operating a lathe).

When people are presented with these slides, most of them see neutral pictures most of the time. Violence, for the average person, turns out to be a "sometime thing." Somehow, the assumption seems to be unconsciously made that non-violent events are more probable than violent ones. As a result, when a choice between the violent and non-violent percept faces the average perceiver, the conflict is resolved in favor of non-violence.

But this is not true for all types of people. We found, for instance, that persons trained for law enforcement work in a three-year "Police Administration" curriculum tend to see violent pictures relatively frequently. They differ markedly in their "violence perception" scores from liberal arts students of comparable age or from persons entering the police training program (Toch and Schulte). This fact seems to show that people can be "trained" to become perceptually more sensitive to violence -- they can be educated to perceive violence with greater ease than other people.

Are social offenders, as a rule, also more "sensitive" to violence than the average person? Are some offenders more likely to perceive violence than others? If yes, how would the offender who tends to perceive violence differ from his cell-mate who sees the world in more neutral terms? To begin to answer questions such as these, it seemed of interest to expose a confined population to our slides. We selected a small open

institution for youthful offenders which is conveniently accessible from our campus. We tested the young men in the camp and obtained wide distribution of "violence perception" scores, ranging from a few inmates who saw almost no violent pictures, to some who saw violence in the majority of presentations. We separated out this latter group and matched each youngster with a "control" of the same age and ethnic background. Further information, such as social histories, projective test scores, and staff ratings, were obtained for each of the high scorers and his control.

The passage of time left the ranks of our "high scorers" badly decimated. Two of the group "walked away" from the camp -- a relatively rare occurrence in this type of institution; five others had to be transferred to prison or reformatory because of disciplinary reasons. Seven out of eleven young men making up the group could be said to have failed to adjust to the institution; the same statement could only be made for one of the "control" youngsters. Clearly, therefore, the tendency to perceive violence in the stereoscope was diagnostic of a tendency to behave violently (Shelley and Toch).

A great deal of further work is needed before we can begin to understand the relationship between violence perception and violent conduct. Is the relationship reliable -- does it last over time? Are we measuring a "personality" trait, the sediment of some special types of experience, or strictly temporary concerns? What process can make a person both perceive and behave violently? Can we relate themes other than violence to types of anti-social behavior? These and other questions must be answered by further research. Further work should also develop practical applications in the field of correction, not only for the "stereoscopic" method but also for other techniques currently employed in the study of human perception.

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