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The Angle Orthodontist: Vol. 66, No. 6, pp. 441–448.

Quantitative comparison of computerized discrete and animated profile preferences

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ABSTRACT

To determine the physical bases of subjective judgments of facial appearance, two computer presentations of discrete soft tissue profile (STP) images were compared with the same images appearing in an animated format. The images were judged by 24 volunteers. The influences of the number and order of faces presented, gender, and dental knowledge were evaluated. Fifteen to eighteen digitized distortions of the chin, upper lip, mandible, bimaxillary relationship, and lower face height were prepared from STPs of four faces (two males and two females) representing Class I, Class I with microgenia, Class II division 1, and Class III. The judges responded to each discrete alteration as acceptable or unacceptable and with a separate rating from 1 to 6. Each feature was then "animated" by presenting the distortions serially at 1.25 frames/set in counterbalanced order six times, from both the extreme protrusive (P) and retrusive (R) distortions. The judges indicated an acceptance zone by pressing a button when the face became acceptable and releasing it when no longer acceptable. The rating responses were more favorable than the simple acceptable/unacceptable dichotomy. Neither of the discrete methods was found to be as reliable as the animated method. Significant differences were found for the animated responses between the aggregate midpoint of acceptability of Class II division 1 and Class III for all features except bimaxillary relationship, thus providing a criterion-based validation of the animated method. The dental judges had a greater tolerance of feature variations than did the nondental judges. By establishing a zone of acceptability in addition to a single midpoint of acceptability, the animation technique may be more clinically useful than discrete presentation for determining individual as well as group perceptions of physical change.

KEY WORDS: Computer imaging, Facial esthetics, Psychophysics.

Submitted: March 1995

Accepted: November 1995.

