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Exploring the Fractures in Treatments Using Naked Eyes, Microscopes, and Mirrors: Insights from Cultural and Linguistic Semiotics

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Dental treatment has evolved from traditional naked-eye examinations to advanced techniques using high-magnification microscopes. These microscopes reveal previously undetectable issues, and the addition of mirrors helps eliminate their blind spots. While this advancement offers clearer vision and more effective treatment, it could also be seen to render the traditional nacked eye treatment as outdated. However, using mirrors requires dentists to have specialized skills to interpret reversed images.

To clarify the methods, they can be grouped as: (a) naked eye, (b) microscope, and (c) microscope with mirror. My contention here is that these three groups can be usefully explained using two linguistic systems: (1) the active-passive voice, where the active voice indicates intention of subjects and the passive voice lacks this, and (2) the active-middle voice, which emphasizes that in the middle voice circumstances or events expose individuals to powerful external forces, and that in the active voice this sense is reduced. Group (a) naked eye examination operates under the constraints of the national health insurance system, aligning with the middle voice of category (2). Group (b), where dentists actively choose to use microscopes to detect issues beyond the naked eye's capability, represents the active voice of category (1). Group (c), microscope with mirror treatment, involves dentists' submissive attempt to adjust to the challenges presented by the mirror's reversed images, fitting into the active voice of category (2).

Beyond linguistic distinctions, there is a fundamental difference in how each group perceives objects. Typically, when we observe an object, we only see a portion of it, but construct from that an image of the whole based on prior knowledge. Microscopes offer a unidimensional view, utilizing the principle of linear perspective, which was rediscovered in the 15th century and subsequently applied to artwork. Dentists using this device with its constrained view are compelled to deduce significant details about dental conditions and infections. Historically, before the prevalence of linear perspective, the 'divergent perspective' allowed for viewing objects from multiple angles, easing the viewer's cognitive load. Some proponents of linear perspective even incorporated mirrors in their artwork to counteract its limitations. This shift in representation indicates that the cognitive effort varies based on the method used. Group (a) relies heavily on experience and intuition, accepting the cognitive load. In contrast, group (c) seeks to lessen this load by adopting mirrors to achieve a broader or multi-angled view, while group (b) establishes itself amidst the two approaches.

While the efficacy of each treatment method of the three groups captures our attention, it is essential to recognize that the distinctions among the groups are rooted in both linguistic and representational subtleties. These nuances, although not always overt, play a crucial role in shaping the approach and outcomes of each method.

Bio

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