Mental representation is based on imagery psychology essay

There is few ways of representing thoughts in our mind, in this essay, we will be discussing about how mental representation is based on imagery, and also talks about whether speech recording is necessary for reading or not. Eysenck and Keane (2000, pp. 243) argued that, " A representation is any notation or sign or set of symbols that represents something to us."

In general, mental imagery is " the mental invention or recreation of an experience that in at least some respects resembles the experience of actually perceiving an object or an event, either in conjunction with, or in the absence of, direct sensory stimulation.

Internal, mental representations consist of symbolic representations and distributed representations (Quinlan & Dyson, 2008). Symbolic representations can be regarded as some well-defined symbols. Every symbol represents a particular and distinct entity, including images.

Indeed, symbolic representations are comprised of analogical and propositional representations (Quinlan & Dyson, 2008). Analogical representations are a variety of images, which can be visual, olfactory, auditory and so on. Although information represented by these images can be acquired from a variety of perceptual sources, the analogical representations are concrete and connected to a particular, specific sense modality instead. In contrast, the propositional representations are more discrete and abstract. Information represented by them can be acquired from any modality. This kind of propositional symbols is usually specific entities and the relationship between them is distinct as well.

Propositional representations are discrete and abstract entities that stand for the ideation of the mind in any modality. Therefore, the representations can be treated as a basic language to represent various mental information.

Propositional representations consist of three aspects, objects, relations and schemata (Eysenck & Keane, 2000). In object concepts, each entity can be defined and characterised by its attributes and features. The definition of an object plays a crucial role in categorising things and organising memories, knowledge, concepts and mentality. Relations focus on how one object is linked to another and on the interaction between them in the propositional representations. For instance, if the relation is an action verb like " hit", people should be able to determine what an agent, a recipient, and an instrument respectively are. Semantic primitives underlie a specific relation. Many psychologists took researches on examining whether semantic decomposition occurs (Eysenck & Keane, 2000). In the expression that " the sun melted down the ice cream", the specific objects are the sun and the ice cream, and the relationship between the two entities is represented by the predicate " melt down". In this case, the mental representation is that the two entities, the sun and the ice cream, are linked together by the conceptual relation " melt down". The concepts and knowledge in people's mind which reflect the world are complexly structured. There are three relative structures, schemata, frames, and scripts. Schemata, involving a lot of concepts are commonly used by people to perceive the world. Scripts were proposed by Schank and Abelson (1977) to explain the knowledge in people's mind of what happens every day. Also, frame was proposed by

Marvin (1975; as cited in Eysenck & Keane, 2000) and was widely used in visual perception.

Therefore, propositional representation is a pretty crucial form of mental representation. Also, imagery is another form of mental representation, which is viewed as analogical representation.

Analogical representations, especially visual images, are another essential form of mental representations. The long-time study of visual imagery can be traced back to more than two thousand years ago when Aristotle considered imagery as " the main medium of thought" (Eysenck & Keane, 2000, pp. 258). Nowadays, the studies on imagery still continue. The essay will concentrate on three important sets of studies that illustrate the properties of imagery.

In the experiment conducted by Cooper and Shepard (1973), the subjects were asked to determine whether the presented figure was the normal version or mirror-image version, compared with the standard one. The result of this experiment was that the more the test figure was rotated from the standard one, the more time the subjects would spend in making their final judgments. According to this experiment, the objects are mentally rotated in the same way that they are operated in the real and physical world. So, mental visual images have all the same attributes and features with those of actual objects in the real and physical world. However, Rock (1973) argued that the more complex the test mental images were, the more difficulty it was for subjects to make correct judgments.

The second set of studies that I am going to disccuss about is on image scanning, this which represents another aspect of the nature of mental imagery. Kosslyn, Ball, and Reiser (1978) conducted a mental scanning experiment that subjects were asked to image a black dot moving from on point on the map to another. The result showed that " the scanning time was linearly related to the distance between the two points" (Eysenck & Keane, 2000). So, images have similar spatial properties with those of objects in the real and physical world.

Another set of studies about imagery is called reinterpreting images of ambiguous figures. Chambers and Reisberg (1985) showed ambiguous figures to subjects, to ask the subjects to interpret every figure in different ways. However, only if subjects had drawn the image of the figure, could they make a reinterpretation of it. The result indicates that the imagery is influenced by some propositional code, and people always ignore what is needed for reinterpretation.

Therefore, imagery is also a necessary part of mental representation. Imagery actually represents the perception of the outside world in our mind and the reflection our internal mentality. Thus, imagery is an important element of mental representation, but cannot completely cover all the aspects of that. Also, mental representation is not simply based on imagery.

According to Kosslyn's theory of imagery, the upshot of the long-time conflict between propositions and images is that images are a distinct form of mental representations, and that images have obvious significance in functions compared with propositional representations.

Propositional and analogical representations constitute the symbolic representations, as a key aspect of internal, mental representations.

However, there is another form of mental representation which is called distributed representations. A distributed representation " involves a simple network called a pattern associator" (Eysenck & Keane, 2000), with no symbols. The pattern associator represents the association between two different sets of units of an object in a network. Hinton et al (1986) proposed that the relationship between distributed representations and symbolic representations is not conflicting, but complementary. Thus, the high-level symbolic representations can be represented by lower-level distributed representations. Also, the lower-lever distributed representations are considered as fundamental part of the high-level representations. Vividly speaking, the symbolic representation is the macro-structure of mental representation, whereas the distributed representation is the micro-structure of cognitive representation.

In conclusion, imagery is only an essential form of mental representation. There are also two forms called propositions and distributed representation. Instead of contradicting one another, the complementary among them is able to help people to perceive and represent the world.