

# Human interface – visual perception and models of interaction essay sample



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Colour affect users in several of ways such as some people find yellow font very hard to read on a white background and some find it very easy to read. For 3D effects the trichromatic system is designed, which consists of three main different colours. These are red, blue and green. Selecting the right colour when a GUI is designed is essential. If the GUI has wrong colours or dull and boring doesn't attracts people to use it. Microsoft Office 2007 has grey as its main colour which is very boring, but the blue used on the toolbar makes it up for it and the orange highlight of the selected tools make it more abstract. These colours are very eye catchy and don't make it look boring.

### Perception luminance

Luminance is how bright a light colour appears to a viewer and that which our brain can handle. For instance, if a bright yellow font would be displayed on a white board could make the text hard to see or to read. Designers of GUI do not take any consideration of the user's computers screens brightness. So for that reason the rule is in order to display the best details means to use luminance contrast.

### Perception Pop out effect

The Perception pop out effect, allows something to "pop out" on a display. A target made up of a combination of non-unique features that normally cannot be detected pre-attentively. Another important consideration is the effect of different types of background distracters on the target. For example a picture consists of blue squares and includes a red square. The eyes will automatically target the red square, because it looks totally different from the other and is outstanding. This is what the pop out effect is.

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Perception pattern e. g. proximity

Most users will think that the pattern is just a part of the GUI as the design or layout, but for the designer it is the template. In Microsoft dialogue boxes makes it easier for the user to use and to get to get use to it. There are seven laws of pattern proximity, continuity, symmetry, similarity, fate, region and connection. Each of the patterns has a different task.

1. Proximity- These are things seen that are close together as a group.
2. Continuity- Smooth continuous lines are easier to read compare to fast lines.
3. Symmetry- It is much easier to see symmetrical shapes such as a ball.
4. Similarity- There are things that look the same as a group and things that look completely different as an individual.
5. Fate- Things we see which move together as a group
6. Region- Things we see close together in some way as a group.
7. Connected- Things we see connected by continuous lines linked to each

Perception Objects e. g. Geons and the use of Gross 3D shapes

Geons and gross 3D shapes are used when reproducing an image. Geons are objects, which are made of many essential properties that allow the user to view the image from any angles. They are easier to design and to recognise than 3d images. As well are they cheap to produce. Compare to the 3d

images it can be more difficult to interpret an image because of the perception of the observer. When designing a GUI the designer needs to consider how the user will view the object. Gross 3D shapes are used in video games and are cheap to produce. They don't need to reproduce the object exactly and are used to transmit images in real time. This means where audio and video signals are transmitted instantly. As well as the costs need to be considered. In some cases costs become less of an issue, such as the use of gross 3D image produced from a robot might be essential to represent a realistic picture and would be used without any regard of cost.

Behaviour models: predictive models e. g. reaction time

A number of models will predict the way in which an interface or user will behave. There are countless of predictive models that provide guidance when an interface or system is designed. This is a method to pre-empting what will happen without carrying out a long research and delay the introduction of the interface by letting people test it out. Reaction time is to respond to a command from a GUI. This will vary depending from the user. Consideration needs to be given when or not the interface will be responsible for time.

Keystroke Level Model (KLM)

The Keystroke level model recognises very low level of action. This model separates each sequence and operates in individual actions. This would be such as clicking the mouse, hitting the keys on the keyboard, pointing the mouse and so on. Each action is placed in an order of time to which it calculates the respond of the system.

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## Throughput (TP)

Throughput is related to the productivity of computers. It measures the amount or speed of processing in response of a command. Others measure productivity including performance of speed, processing and any other variation to the number of tasks and complexity. This can also be called as response timing.

## Fitts' Law

Fitts' law is used to calculate the throughput in advance for any system designed by predicting human movement and motion based on time and distance. Fitts' law was developed in 1954. This was to counteract the time taken for travelling from one place to another. It identified that time depends on the size of the object to be moved. The time of the user will vary depending on the user.

## Descriptive models e. g. Key-Action Model (KAM)

Key Action Model identifies the need to evaluate the user will expect the computer to behave or react and how it will be different from how a computer reacts to a command. For instance if a person is completely new to computers, he won't know why it is important to type their username and password accurately. Sometimes delays occur in a computer while carrying a command out. This can be caused due to background operating software. The user will automatically know this as a timer will appear on his screen, which will exactly tell him what is going on.

## Buxton's three state models

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The Buxton's three state model is the pressure and dexterity that makes the users movement using mice and touchpad's. When designing the interface you need to consider the amount of effort and pressure the user will need to make, give or respond to a command. This interface will also be responsible whether the command is made by mouse, touchpad or a roller button on the keyboard. It also identifies the relative ease of using a mouse. This depends on the regularity of usage, such as someone might find it easier to use touch screen and some the mouse.

### Guiard's Model

This relates to the preferred method of interaction with computers and devices. When designing a interface, you must consider the ease of use and not to rely on the user to type the data by hand. The position of the interface needs to be easily accessible and logically laid out. Guiard's model indentify users who use both hands are unlikely to perform the equal effectiveness action with either hands.

### Information processing: humans as a component

This explores how information is processed and how fast it is done. One of the key differences in HCI design is the human end user. It isn't only difficult to manage but it can be also difficult to identify people needs and aspiration. One way to prepare for all is to carry out a risk assessment.

### Human information processing (HIP)

HIP means the way we actually absorb the information, analyse and use it and do something with it. Our brain takes the information in and then uses <https://assignbuster.com/human-interface-visual-perception-and-models-of-interaction-essay-sample/>

the mind to process it. The output depends on previous knowledge and the ability to interpret information and even our willingness to do something with it. Improvements could be achieved by changing the data provided, by improving ability of decision making and by construction of formal models of human decision making.

Overview of goals, operators, methods and selection (GOMS)

GOMS predicts the time it will take to carry out an action or to follow a command. The designer identifies the outcome by using a series of methods, in order to carry out an action. This allows the designer to calculate the time it will take to execute the action and to identify any risks. The designer can use the results to identify which of the methods is the best of user interface, based on the requirements.