

## **Task 4 Bill Verplank**

### **Part 1 0:00-8:00**

Bill explores human cognitive development, symbolic thinking, and computer interaction design. He begins with Piaget's theory, showing that learning occurs through body movements and that children grasp the concept of "conservation" (unchanging quantity despite shape changes) around ages 5-7.

Next, Bruner's three types of knowledge are explained:

- Inactive knowledge: understanding through actions.
- Pictorial knowledge: understanding through visual perception.
- Symbolic knowledge: abstract thinking via symbols, key to adult intelligence.

He emphasizes the role of symbols in interaction design and education for handling abstract concepts. Drawing on Alan Kay, he explains how manipulating images and symbols fosters symbolic systems, essential for cognitive growth in children and adults. Finally, Bill ties this to interaction design, highlighting the evolution from symbols to graphical interfaces, stressing intuitive design and the importance of enhancing, not replacing, human abilities.



Figure 1

Explain the concept of 'systems thinking' in interaction design using three questions.

## Part 2 08:00 - 10:00

For this part of the video, he wanted to introduce the connection between sketching and thinking, mainly showing content from his sketchbook and emphasising the importance of sketching as a thinking tool. Through sketches of the relationship between time and space during a flight journey, he shows how drawing can be used to organise thoughts and analyse problems. Sketching is a way for him to understand complex concepts and convey information. We are urged to "think" with a pencil.

Part3 10:00 - 28:00 Summary:

This segment of BILL using crayons showed me how to create a design, with the three main questions mentioned:

How do you do it? This is about the actions people take in the world and how design connects people to their surroundings.

How do you feel? This question is about sensory experience - the way people perceive the world through their senses.

How do you know? This question is more abstract and deals with perception - how people understand and think about their environment.

In the second part, Bill uses a side-by-side drawing to explain how people interact with systems through feedback, adjusting to inputs and goals. He highlights "systems thinking" in interaction design, focusing on understanding system goals, feedback, and user interaction. The aim is to design systems that guide behavior and enable efficient task completion. Finally, Bill references Piaget's cognitive development theory to show how design principles have evolved.

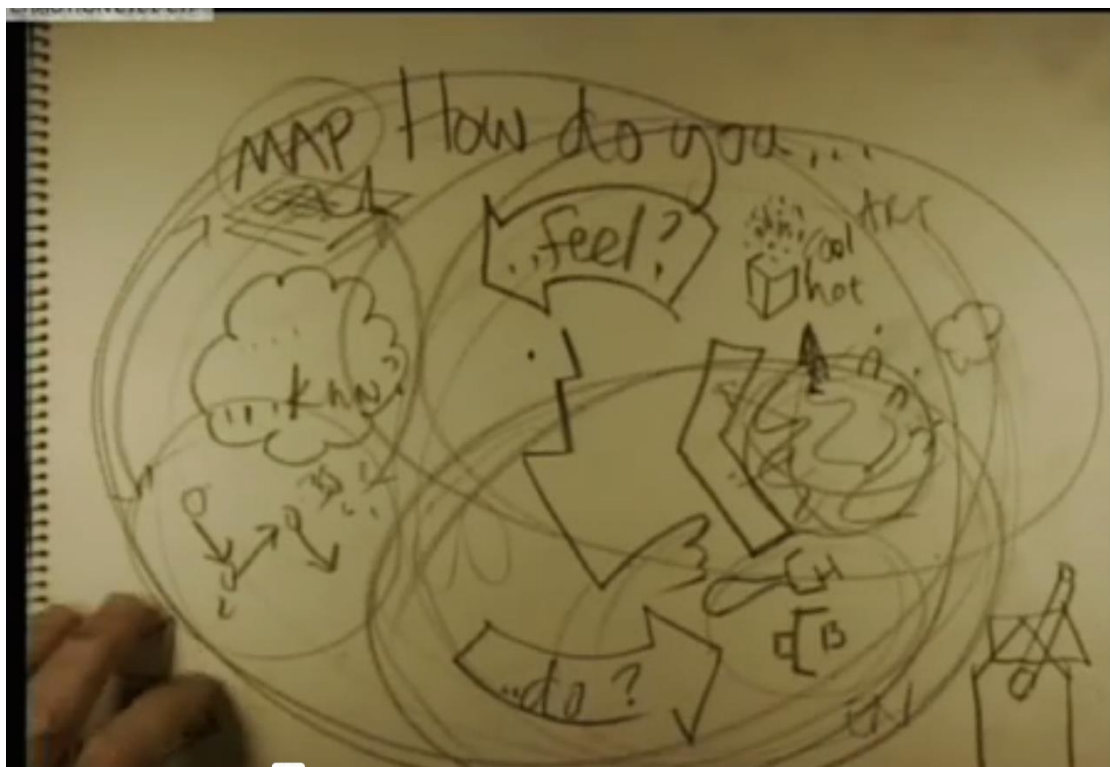


Figure 2

#### Part 4 28:00 - 50:00

Bill discusses cognitive development, symbolic thinking, and the evolution of interaction design. Drawing on Piaget's theory, he explains how children learn through actions and only understand "conservation" around ages 5-7. Bruner's

knowledge types—inactive (movement-based), pictorial (visual), and symbolic (abstract thinking via symbols)—highlight the importance of symbols in design and education. Alan Kay's view emphasizes how manipulating images and symbols fosters symbolic systems, aiding cognitive growth in children and adults. Bill then explores how computers evolved from symbolic interaction to graphical interfaces, making design more intuitive. He stresses the role of user research and usability testing, quoting Doug Engelbart's idea that computers should enhance human abilities rather than replace them, with design focused on improving efficiency and experience.

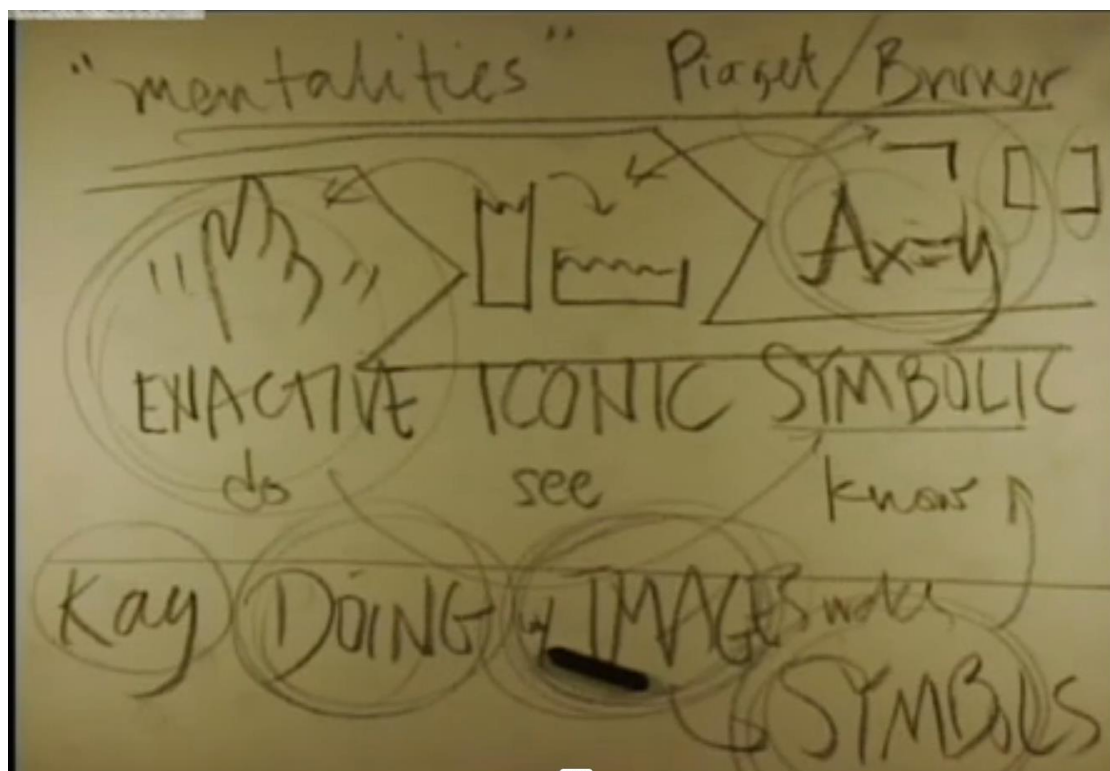


Figure 3

## Figures



Figure 1

Interaction Design Association (2024). Bill Verplank: Opening Keynote. [online] Vimeo. Available at: <https://vimeo.com/20285615>.

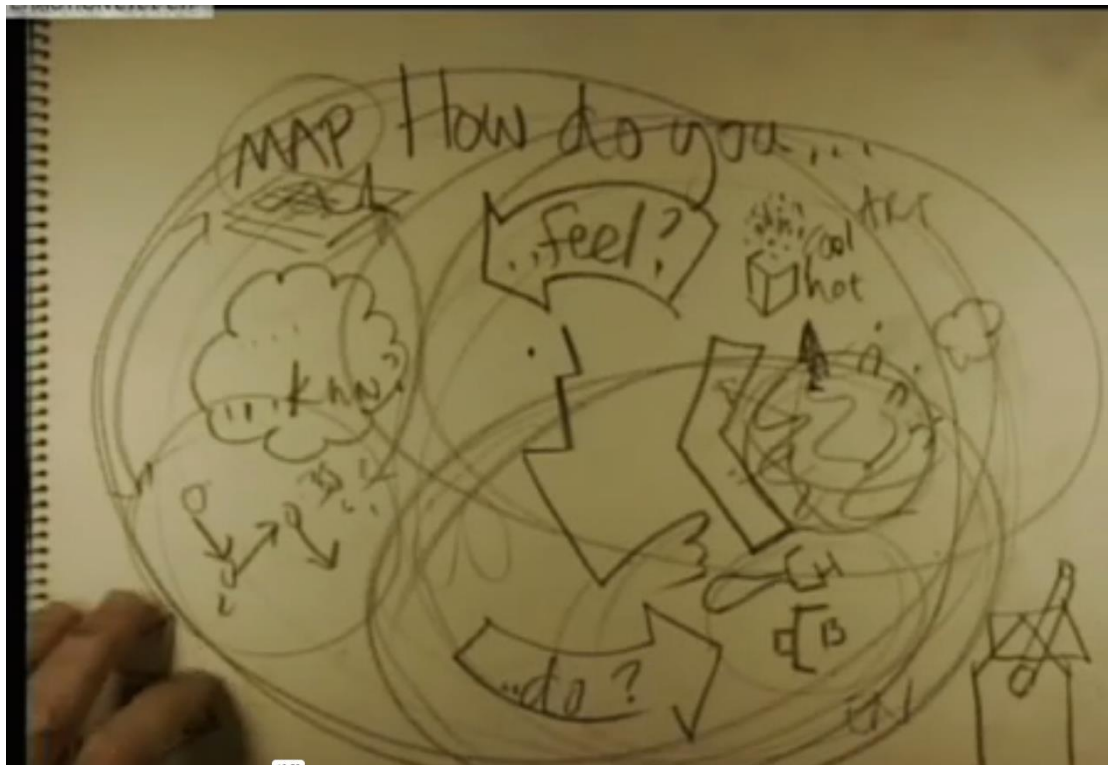


Figure 2

Interaction Design Association (2024). Bill Verplank: Opening Keynote. [online] Vimeo. Available at: <https://vimeo.com/20285615>.

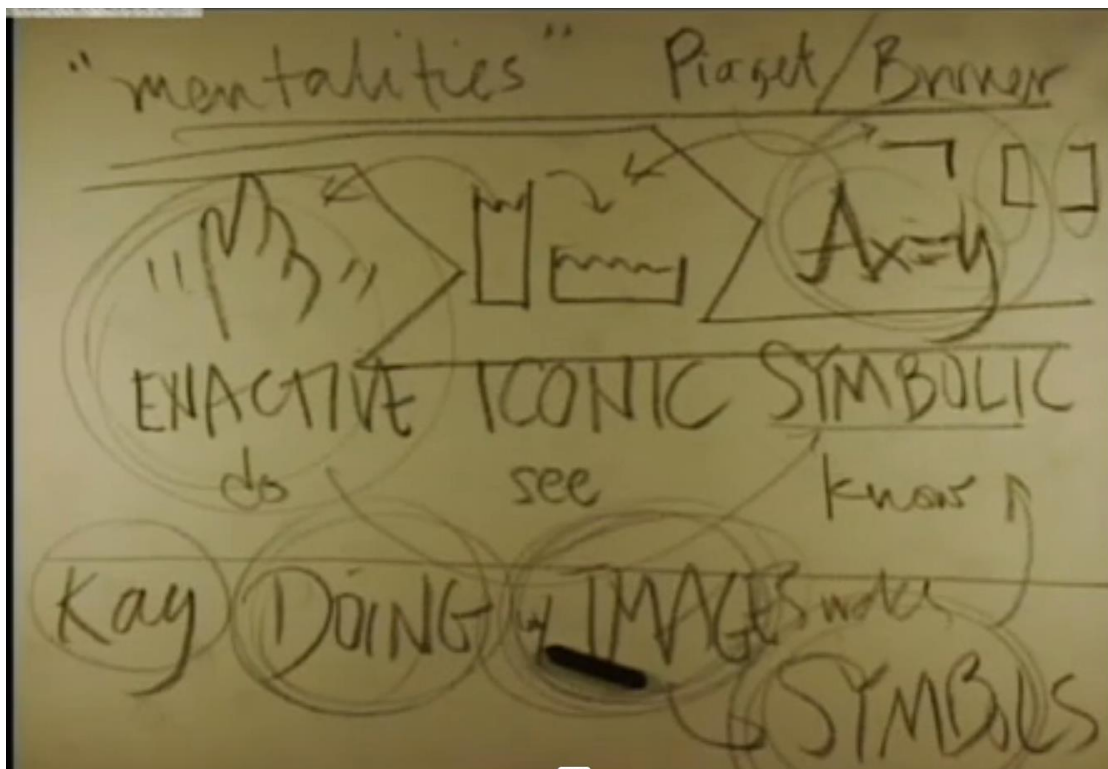


Figure 3

Interaction Design Association (2024). Bill Verplank: Opening Keynote. [online] Vimeo. Available at: <https://vimeo.com/20285615>.