The physical constraints of media

Media are no more than objects that have their unique set of physical attributes. Some paint liquids are more viscous that others. Some wire is more bendable than others. Some blocks are heavier than others. These variables affect the ease with which a particular medium can be used to capture or express a chosen referent. It would be hard to represent some familiar aspect of snow using thumb tacks, but easier to do so with white sand. We call this relation the affordances of media. What aspects of a referent (e.g. snow) does the media afford (easily allow)?

The relation between the physical affordances of a medium and the resulting representation (e.g. the work of art) traffics in two directions. The child might search for the best medium to represent the desired aspect of the referent, such as using heavy stone blocks to build the fort wall meant to be a strong defensive barrier. The imagined aspect of the referent (strong wall) precedes the choice of the medium (heavy blocks). The child is not learning something new about fort walls. She seeks to represent what she already knows.

At other times, the actual process of using the medium sensitizes the child to new aspects of the referent, things the child would not have considered had she not been playing with that particular medium. For example, in building the wall of the fort the child notices that blocks have beveled edges. When the blocks are stacked the seams of their interface are conspicuous, more like grooves. She then shifts her view of the wall as a bulk structure to a wall with a pattern of cracks. The child begins to play around with different patterns based on whether the wall is a set of columns with each higher block placed directly over the block below (Figure 1), or if the block on top is placed over the crack of the two blocks below (Figure 2).
In this process of varying the pattern of her wall the child learns something about the concept of a wall (the referent). Walls made according to Figure 2 are even stronger than walls made according to Figure 1. The weight of a block above the crack between two blocks below puts pressure on both blocks below to hold them together. A row of stacked columns has no such distributed pressure. The wall in Figure 1 could be breached by the collapse of any one of the columns. The wall in Figure 2 holds together more as an integrated unit.

Returning to affordances, it was the beveled edges of the stone blocks that more easily afforded rendering walls with different patterns (as seen in the more conspicuous cracks), and that in turn led to the child exploring this new aspect of what she wanted to represent. Those variations eventually lead to the discovery of the relation between the form of a pattern and its function in terms of stability. The child was not representing in blocks something she already knew about walls; she was learning about walls because of something she knew about the medium. In effect, we use media to represent what we know and we learn to represent discoveries about the referent that result from the affordances of the medium.

From the eBook *Windows to the Child’s Mind* by George E. Forman

- You may copy this text into a text file on your personal computer. Please distribute as you wish.