

appropriate auxiliary line. Yet sometimes we can take the decisive step without introducing any new line, just by conceiving the lines already present in a new fashion. For example, we may notice that certain lines form a pair of similar triangles. In noticing this familiar configuration, we recognize hitherto unobserved relations between the elements of the figure, we see the elements differently grouped, we see a new structure, we see the figure as a better arranged, more harmonious, more promising whole—we have restructured the problem material.

Regrouping may involve a change in emphasis. Elements and relations which were in the foreground before the regroupment may now surrender their privileged place and recede into the background; they may even recede so far that they practically drop out from the conception of the problem. For better organization we must now and then reject things which we thought relevant some time ago. Yet, on the whole, we add more than we reject.

### 11.11. Isolation and combination

When we are examining a complex whole, our attention may be attracted now by this detail and then by another. We concentrate on a certain detail, we focus on it, we emphasize it, we single it out, we distinguish it from its surroundings, in one word, we *isolate* it. Then the spotlight shifts to another detail, we isolate still another detail, and so on.

After examining various details and revaluing some of them, we may feel the need of visualizing again the situation as a whole. In fact, after the revaluation of some details, the appearance of the whole, the “*vue d'ensemble*,” the “*Gestalt*” may have changed. The combined effect of our reassessment of certain details may result in a new mental picture of the whole situation, in a new, more harmonious *combination* of all the details.

Isolation and combination may advance the solution in complementing each other. Isolation leads to decomposing the whole into its parts, a subsequent combination reassembles the parts into a more or less different whole. Decomposed and recombined, again decomposed and again recombined, our view of the problem may evolve toward a more promising picture.

### 11.12. A diagram

A diagrammatic summary of the foregoing sections is offered by Fig. 11.1, which the reader should take for what it is worth. Nine terms are arranged in a square; one occupies the center of the square, four

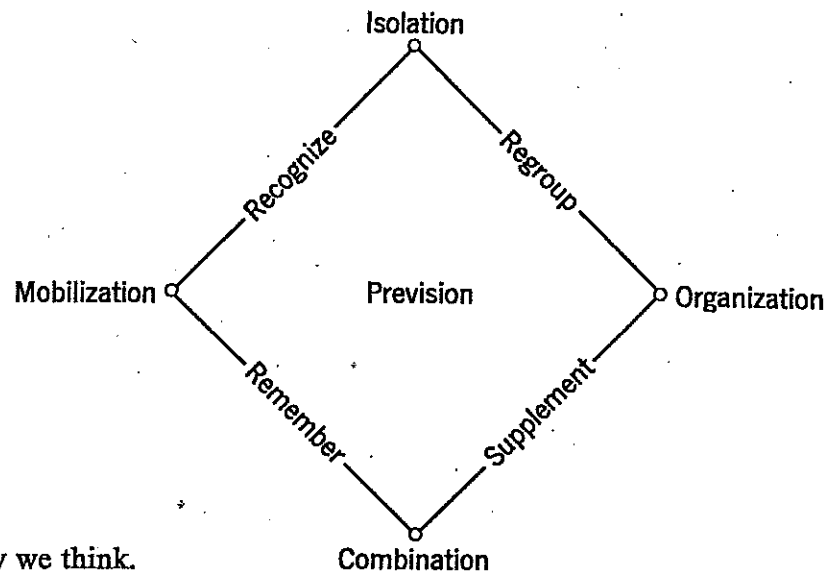


Fig. 11.1. How we think.

others the four vertices, and four more terms are written along the sides.

*Mobilization* and *organization* are represented by opposite ends of the horizontal diagonal of the square. In fact, these are complementary activities. *Mobilization* is extracting relevant items from our memory, *organization* is connecting such items purposefully.

*Isolation* and *combination* are represented by opposite ends of the vertical diagonal. In fact, these are complementary activities. *Isolation* is selecting a particular detail from the surrounding whole, *combination* is assembling dispersed details to a meaningful whole.

The sides adjoining the corner assigned to mobilization are labeled *recognize* and *remember*. In fact, mobilization of items relevant to the problem often starts from recognizing some element given with the problem and consists in remembering connected elements.

The sides adjoining the corner assigned to organization are labeled *supplement* and *regroup*. In fact, organization means supplementing the conception of the problem, making it fuller by adding new details and filling the gaps; and it also means regrouping the whole conception.

As we read the terms along the sides of the square, from left to right, we proceed from mobilized details to the organized whole; a detail just recognized, carefully isolated and focused, may induce a regroupment of the whole conception. Also, a detail remembered which fits into a combination is suitably added to the conception and supplements the whole.

*Prevision* is the center of our activity aimed at the solution, as the corresponding point is the center of our symbolic square. We keep on mobilizing and organizing, isolating and recombining, recognizing and remembering all sorts of elements, regrouping and supplementing