

XI

Warming Up

"When Einstein thinks hard, he runs a fever."

Some newspapers made much of this fact when the great mathematician first broke into the headlines. But it was much less surprising to physiologists and psychologists than to the reporters. All hard thinkers warm up on their jobs, just as bricklayers and fiddlers do. Indeed, it is easier for a man with a good frontal lobe to work himself into a fever over a puzzling problem than for a member of the bricklayers' union to develop a mild perspiration.

One of my Columbia colleagues, a chemist of note, told me years ago that he often had to stop work for a day or two in order to bring his temperature down to normal. And school physicians will testify that bright boys and girls who become deeply interested in a new subject literally grow hot over it. The brighter, the hotter. The duller, the colder.

Now this raises a practical question. What if you do not naturally warm up to a task? Will it pay to heat yourself up by some device? Or must you resign yourself to a life of frigid

dullness? There is a general answer to this which has many exceptions. Some people simply cannot speed up and warm up. But many who think they cannot are in error. For them the rule is simple.

Any accelerator that works and leaves no serious injuries in its wake is worth using.

Let us cite a few obvious varieties. Start with coffee. I use it in great quantities, for it speeds me up instantly and rarely interferes with sleep or digestion. For me, then, it serves a good purpose. But tea! If I resort to that insidious drug, I am enormously accelerated—but at what a price! Its hang-over is more terrible than gin, rum and arrack rolled into one. The stomach goes on a strike. Sleep becomes a mere tossing. So I abstain from tea. But I know some people who drink it by the gallon and forswear coffee. In a word, then, we are here dealing with personal peculiarities.

Consider another case, exercise. I know a few people who must brandish dumb-bells and do all their morning radio exercises in order to warm up for the day's work. Having tried such, I must confess that it is the surest way to ruin my entire day. Physical exertion before noon is not only repugnant but downright poisonous. Why this should be, I cannot understand; but it has been proved over and over again. Vigorous exercise surely warms up the body as a whole; so, I surmise, most people will find it useful as a means to more effective work.

How about semi-starvation as a mental stimulant? Studies of people who have cut their diet to an absolute minimum and reduced physical efforts correspondingly indicate that the mind grows clear and lively when the body hungers. Many people have applied this law with much success.

Here is a much commoner and simpler trick, probably known to you already and practised now and then. Just as a baseball player warms up before the game by knocking and throwing the ball up and down field; just as football teams warm up by running through signals for ten minutes before the whistle blows, so almost any other worker may whip up his circulation by putting things in order, running through a few preliminary movements, dipping into a book or two, sharpening pencils, arranging his stationery, pulling the curtains down, fixing his chair. A variation of this is to run over the work of the previous day, get the feel of it, and thus swing into one's stride.

Probably the worst minor mistake to be made is to start in smoking before warming up. It is quite certain that, in at least eight men and women out of every ten, the pleasure of a cigarette or pipe is dearly paid for by a retardation of mind—and at the very time when acceleration is most sorely needed. Tobacco, like beer and other narcotics, must be put into its place, which is at the end of a working period, when the worker wishes to let down and forget

his toil. A morning smoker is almost certainly an inferior master of energy.

Warming up to a task is largely a matter of improving attention. It involves, first of all, the complete inhibiting of all impulses that may have been persisting faintly from earlier acts; and then too, it often involves a sharpening of the focus within the new field of attention. Do not suppose, however, that this fact reduces the importance of muscular warming up. Remember that all attending is a "tending toward" something. Remember that tending toward something is moving the eyes, cocking the head, adjusting legs, arms, hands and fingers with reference to the new task.

All such adjustments occur first of all in the central nervous system. We may call them "sets" or "attitudes," if we keep clearly in mind that such processes are the first stages of patterned action. Unless there is a "set" or "attitude," there can be no immediate progress toward the developed outward act of attention, with its ensuing completion of a task. This is why teachers insist that the beginning of all effective learning is the creating of appropriate attitudes. The stronger and clearer the initial attitude, the faster the warming up. The latter does not depend appreciably upon skill. Many highly trained people take a long time to warm up, while wholly untrained warm up fast.

I suspect (but cannot prove) that great slowness in warming up to *all sorts of tasks*

probably is linked with the neurotic constitution most often and with anemic types of low energy almost as often. On the other hand, warming up to a task that is distinctly unpleasant or uninteresting may be difficult for any normal person, hence of no diagnostic value.

E. B. Skaggs, of the College of the City of Detroit, has studied the "warming up" process for three years. His findings result from experiments in manual work. But with only a few amendments they may be applied to warming up in mental work as well.

Under any of the following conditions, you will probably improve your work as you get into full swing:

1. If you are by nature slow in adjusting and readjusting to any given task, you will tend to improve as you get into it. Here people vary greatly. Some take more and some less time to get under way.

2. You will undertake work more efficiently after a period of mental relaxation than if you must switch from a task which has deeply absorbed you.

3. If you are emotionally aroused or excited, your first efforts in a task will be notably less efficient than later ones. As your emotion subsides your work improves. (Remember, though, that in some cases emotions increase your efficiency even at first.)

4. Effort and determination to do a job, especially after poor work at first, warm you

up to your work, provided the job is not beyond your abilities. Psychologists call this "reaction to failure." Probably mild irritation or anger at your poor first results accompanies increased endocrine stimulation, thus heightening your energies and toning you up to a better job.

The more determined you are to do your best from the very beginning, the less likely you will be to have to warm up to the work.

5. If you are "off form," you will warm up after sheer practice. Even people highly trained in the work presented often find themselves not up to the job at first. But they improve rapidly as they get going.

6. In work involving swift and fine muscular activity, you will probably get into swing faster if you "limber up" first. While the results discovered by Skaggs and his colleagues here are not conclusive, the investigators agree that warming up may occur, since all the muscle fibres do not contract to capacity when first stimulated.

7. Probably your perceptions and your thinking are "toned up" following muscular activity and tension, thus improving your efficiency as you go along.

When are you likely not to warm up? Probably in the following cases:

1. If you undertake a job when you are full of interest, effort, and determination to do it well.

2. If you become emotional over the

task as you go along, turning angry, excited, or disgusted with your efforts because you realize that the task is beyond you. Many people tested here remarked that the pace was too great for them, and they broke down under the strain.

3. Under certain conditions of fatigue, you may not "warm up." These, however, we shall discuss in another section.

Warming up in the higher activities is practised by many experts. One of the ablest insurance salesmen in America has for years followed the simple rule of putting himself through his paces just before tackling an important prospect. On the day he plans to call on a big business man with a proposal of heavy insurance, he sets the date in the afternoon; then he calls on two or three "cold cases"—that is, on men he does not know and with whom he has made no previous engagement. To these he tries to sell insurance of the same sort he is going to offer the big business man. Naturally, this is a hard job, so he must exert himself much more. Thus he gets into the swing of the afternoon's assignment, warms up, and improves his approach.

Much preliminary work that seems to be sketching and first drafts in the pictorial and literary arts turns out to be mere warming up. And I think teachers in these fields ought to enlighten beginners on this point, if only for the sake of disillusioning them. Even a gifted writer, at the outset of his career, finds it hard

to get into a piece of work. The difficulty is not at all simple and uniform. Sometimes it is chiefly one of approach: the perspective, the angle of narration, and the specific treatment of the material can be found only by the crude animal technique displayed by the rat in a maze, a hither-and-yon scamper, a sniffing and feeling all around the puzzle. No rule of progress exists, inasmuch as nobody ever before tried to write about that particular thing in that particular spirit. Now, in this hunt for the right course there is always a good deal of warming up which makes the senses and the imagination more alert, often heightening motor activities as well. If the worker happens to warm up slowly, he must be taught to expect annoyingly slow approaches.