

## **The Method of Levels: a cognitive-therapy synthesis**

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The title of this paper is somewhat misleading, in that the Method of Levels (MOL) did not start out as an intentional synthesis of other therapeutic techniques. It was originally just an interesting exercise in awareness, related loosely to Perceptual Control Theory (PCT: refs) and tested only by seeing whether, upon trying a short sample session, others found the same phenomena when questioned in certain specific ways. It was almost included in a chapter of the first book on PCT (ref) but was omitted because editors felt it was not sufficiently connected to the rest of the book. Only after many additional years during which clinical psychologists became interested in PCT was this method recognized as a possible therapeutic tool and more clearly related to PCT. Now, 36 years after its appearance in the original manuscript of the first book, it is being tested in Scotland, England, Australia, and the United States and possibly in other countries where there is interest in PCT. Preliminary testing has shown strong indications that it is useful in dealing with a variety of psychological problems traditionally described as "disorders." Experience with it is tending to support the idea that it involves therapist-client interactions which can be found in many other methods, though it also omits some common aspects of therapy for reasons to be discussed.

### Perceptual Control Theory

The basic idea of Perceptual Control Theory, or PCT, is quite simple, and is derived from the way a simple artificial control system is designed. The PCT model proposes that organisms sense variables outside them, compare the resulting perceptual signal with an internal reference signal, and convert the difference (or "error signal" in engineer-talk) via an output transducer to an energetic output effect, a behavior, which acts through a feedback connection in the external world to affect the environmental variables that are being sensed, while they are being sensed. Such an arrangement, if properly designed, will very quickly adjust the external variables until their perceptual representation matches the reference signal, and maintain the match even if unpredictable disturbances affect the variables being sensed or if the setting of the reference signal changes. Most artificial control systems, even today, are designed this way.

In more psychological terminology: a living control system acts to make its perception match an internally-specified goal-state, and does so by varying its actions, its behavior, to achieve and maintain the match: it acts on its environment so as to control its own perception by altering its own inputs.

Three aspects of the hierarchical control-system model are relevant to the method of levels. One is the idea that higher-level systems act by specifying reference conditions or goals for systems in the next lower level. Another is contained in the proposal that perceptions at the higher level are built from collections of lower-level perceptions. And the third is the fact that there are multiple control systems operating independently at each level of organization in this model. There is experiential and experimental evidence for each of these aspects which can be explored by following the internet links in Note 1.

The multiplicity of control systems at a given level, operating simultaneously and in parallel, is the basis for the fundamental theorem of MOL: conflict between control systems at the same level of organization is the primary cause of psychological problems or disorders. The problem is not that there is some particular conflict, for example Freud's thought that conflicts about sex were the underlying

cause of most neuroses. The problem is that any conflict between active control systems leads to effectively losing the ability of either system to control.

Control systems in conflict do not act like passive objects coming to a stop in a collision, as when one rock rolls downhill against another rock. If the downhill rock is firmly held in place, there will be a balance of forces: the rock that rolled downhill pushes on the stationary rock with a force determined by its mass, its shape, the angle of the slope, and gravity, and the downhill rock pushes back with precisely the same force. The two rocks can rest in that equilibrium for a million years, if nothing else changes.

When two control systems come into conflict, it is because the action of each one that is generated to control its own perception disturbs the input of the other control system, causing the perception to change and the error signal to rise in the other system. That error signal causes the other system to push back, disturbing the controlled variable in the first system (because it interferes with the action of the first system on the first system's own controlled perception). That makes the error signal in the first system greater, so the first system pushes back harder on the other system. This picture of conflict applies both to conflict between different people, and conflict within one individual.

If the amount of mutual disturbance is not too great, the result will be similar to the case of the two rocks. The two control systems will come into equilibrium, each pushing with the same amount of force with which the other is pushing back. However, if the amount of mutual disturbance exceeds some rather small threshold, the two systems will go into a runaway condition in which one system pushes, the other one pushes back a little more, and so on until the final result reaches a limit because one system can't push any harder. The result is that one system is using all the behavioral effort it can generate just to push against the other, and the other system has a greatly-diminished ability to resist disturbances or generate a range of values of its perceptual signal, because most of its energy is being used just to cancel what the other system is trying to do. Both systems have been crippled. Whatever those systems were originally created to accomplish, it can't be accomplished any more.

Translating into the realm of organisms, the result of conflict in a living hierarchy of control systems will be the effective removal of two control systems from the hierarchy. Systems of higher order that use these systems will have to be reorganized to use alternate ways of controlling their own higher-level perceptions, or will simply fail to control if there are no alternatives. And of course the perceptual variables formerly controlled by the conflicted control systems will be frozen in a constant or only slightly variable state that can no longer be used to achieve higher purposes. Physical forces need not be involved in higher-level conflicts; the conflict can appear simply as one system sending a positive output to the reference-signal inputs of a lower system, while a second system at the same level as the first sends a negative output to the same reference-signal input at the lower level. One goal cancels the other. The net reference signal would then be frozen in a narrow range of values, even zero, so that the lower control system no longer seeks varying goal-states for its own perception. It is just as if the higher systems are paralyzed, though both are generating as much output as they can, or nearly as much, in opposite directions. The lower system will still resist disturbances, but only relative to a fixed "virtual" reference condition. Any attempt to force the lower-order behavior to change will be resisted, because any change will reduce the error signal in one of the higher-order conflicted systems, while increasing the error signal in the other. The net behavior will strongly resist whatever is trying to cause the change: a therapist on the outside, or will-power or logic on the inside.

Therapists may already see that these consequences of conflict are familiar. They may appear to be disorders in themselves, but they are, according to hierarchical PCT, just symptoms of conflict at a higher level. To remove the disorders permanently, the conflicts that cause the disorders must be removed. Those conflicts can be discovered and removed by the method of levels -- with the help of the final aspect of PCT to be discussed here: reorganization, and one phenomenon for which there is as yet no explanatory theory at all, awareness.

### Reorganization and Awareness

The most fundamental kind of learning in PCT is the result of the action of an inheritable property of living control systems which is called, collectively, the reorganizing system. The principle of reorganization is trial and error, an action like that of W. Ross Ashby's "Uniselector" (ref) which was the inspiration for this aspect of PCT. The reorganizing system is a set of primitive control processes that "perceive" (definitely in quotes) some basic variable intrinsic to the organism, compare that perception to an inherited reference condition, and on the basis of the amount of error, drive a process of random changes in the brain that alter the wiring of the control systems by changing synaptic weightings. That is the basic theory of learning in PCT, and replaces the concept of reinforcement. While reified for the sake of clarity as "the" reorganizing system, the required properties may be part of every control system, innate or acquired, in an organism.

With the proper initial organization of the brain-model and the right strategy of random changes, this process proves, in simulation, to converge very rapidly to a final form of behavioral control system. But the underlying control system that causes the reorganization is controlling only the intrinsic variable, or "essential variable" as Ashby called it. The random reorganization proceeds at a rate determined by how far the intrinsic variable is from its reference state, and stops (or reaches a minimum) when the intrinsic error is small enough. The reorganizing system, while it does create organized behavioral control systems, does not care what control systems it creates; it is concerned only with reducing the difference between the variables it senses and the inherited reference condition. If the learned behavioral control systems behave so a side-effect is to keep the intrinsic variable at its reference level, reorganization stops. This principle is demonstrated in some detail in several chapters of (Powers, 2008).

Reorganization is essentially the mirror image of reinforcement. Instead of reinforcers causing an increment in the probability of the behavior that was reinforced, a too-small or too-large value of some essential variable causes random reorganization which stops only when behavior becomes organized so as to restore the essential variable to a genetically specified state.

The last concept needed here is that of awareness. This concept was actually involved in the origin of the method of levels, which was simply an attempt to investigate a phenomenon of awareness. I recently described this attempt as follows:

*In the early 1950s, a friend (the late Kirk Sattley) and I had been remarking on the odd way in which one can be discussing one topic of interest, and at the same time have background thoughts about the discussion itself, such as "I'm not saying this very well." The background thought is not at the same conceptual level as the main topic; it's a meta-thought which is about the thought being discussed, or about the act of discussing it or thinking about it.*

*We decided to see if this sort of meta-thought could be brought into the foreground for discussion, and after being the focus of a conversation, might give rise to another background thought -- and so on, for as many levels as could be found. Was this a circular process? An infinite regression? The answer to the first question was "sometimes," and to the second, "no."*

*What was most interesting about this casual investigation was that when the trail was followed long enough, it ended in a state of awareness in which the steps by which it was reached were observable in memory, but there was nowhere further to go. Unexpectedly, it was an extraordinarily serene state of mind. Furthermore, the point of view from which those experiences were seen was not itself observed. There were obvious resonances with Eastern philosophies, and I was told many years later that it is probably the same state of mind now being referred to by others as "mindful awareness." Sattley and I were far from being the discoverers of this phenomenon. And at the time, we had no model with which to make sense of it..*

*At this point the experiences were interesting and actually quite useful as a way of resolving problems, but the most critical step was not recognized until much later. Sometimes (we did this many times, over months), the process would simply stop and go in circles, it seemed. At some level, it became impossible to find another background thought. Only much later, after PCT was developed and the phenomenon of conflict was formalized, did it become clear that the process of "going up a level" stopped when a conflict was encountered.*

Once the idea of conflict surfaced, the connection to PCT solidified, and the transition from background thought to foreground was linked to the idea of levels of organization in hierarchical PCT. The background thought, it was finally realized, always seemed to be related to the reason for the foreground thought, as if the foreground thought contained things that were there only as a means of achieving a higher-level goal. For example, one goal achievable by adjusting one's way of speaking about a topic is to speak clearly and coherently, and an error signal in a control system concerned with clarity and coherence, definitely higher-level ideas, could quite plausibly give rise to the thought, "I'm not saying this very well." Normally, we may be trying automatically to speak clearly and coherently, but when our attention is on what we are trying to say, monitoring for clarity and coherence takes place without awareness. Even making a comment about not saying this very well can come and go with only fleeting awareness of uttering it.

In the investigations with Sattley, however, the job of the listener was to catch such fleeting references and to ask, "was that a background thought?" When the explorer stopped to remember and look, the answer was often not merely "yes," but a burst of illumination -- a real insight, a surprise.

That connection was the last to be made before MOL became a method: the observation that reorganization follows awareness. The main way in which an external onlooker can influence reorganization in another person is to call attention to different aspects of reported perceptions before the subject changes to something else. Apparently, where awareness is focused is where reorganization also is concentrated. Most therapies, in fact, assume this: Therapists try to help clients become aware of things they had not been aware of, because doing this appears to promote change -- reorganization -- in the right places.

## The Method of Levels: a technique and an attitude

The method of levels consists of two main processes. The first is to guide the client to higher levels of perception, and the second is enable the client to discover, define, and (one hopes) remove conflicts that are discovered on the way.

In PCT, reorganization is considered to be the origin of all basic systematic processes such as verbal reasoning. Not all changes in organization, however, start at that basic a level. One can, after all, solve many problems by already-learned systematic methods and logical thinking, or just by having someone else think of a good solution. But persons who seek therapy do not, evidently, have problems susceptible to any systematic problem-solving methods they have learned or been given: they need some new ones, and not just new ways of reasoning but new ways of perceiving, new goals, and new ways of using lower-level behaviors to maintain control at higher levels. The only way left to accomplish these changes when no existing methods work is through reorganization (behaviorists would say, through reinforcement of new patterns of behavior).

PCT leads to avoidance of such common therapeutic methods as advice-giving, classification of problems, and prescriptive suggestions. The reason is simple: in PCT, all basic changes of organization in a person are seen as the product of that person's capacity to reorganize. Reorganization is the source of new patterns of behavior, which are experienced simply as possible ways to act or perceive. But those possibilities, when tried or imagined, may not make the overall underlying error decrease, because they often, even usually at first, result in conflicts with other goals. In that case, reorganization continues, producing one new possibility after another, until finally a change is found that does start a decrease in the underlying problem. Consciously, the person starts feeling better instead of worse when the change is implemented or imagined. Donald T. Campbell called this process "blind variation and selective retention," and saw the similarity of meaning after hearing about Powers' early concepts of reorganization in the 1950s.

Advice-giving suggests to the client some course of action or some strategy that the client had not thought of. The basic problem is that this way of producing possible changes in organization, since it is the product of the therapist's rather than the client's creative facilities or past experience, cannot be tested in advance against the client's hierarchy of goal-seeking systems. When the client tries to follow the advice by imagining it or actually doing what is described, the almost-inevitable consequence will be conflict with some other goal that the client values. Listening to tapes of therapy sessions in which advice is given reveals that most clients object immediately to the therapist's advice, with the result that the therapist has to persuade and sometimes argue with the client to get agreement to try the suggestions out. This argument happens almost unconsciously on the therapist's part; the client's objection or reluctance is treated automatically as a disturbance to be overcome. And even if the client accepts the suggestion, immediately or eventually it often proves to be the case that the advice is not actually followed. Resistance and noncompliance are two commonly-noticed obstacles to therapy. In the framework of PCT, they are both predictable. It is up to the client to find the systematic method that doesn't just create more conflicts. And even full-time caretakers would have difficulties, because they would not know what intrinsic errors, exactly, need attention. They would be in a position much like that of a parent trying to figure out why a baby is crying. Only the baby can tell when the current problems diminish. Only the client can tell when the result of some change in organization has made things better.

In MOL therapy, resistance and noncompliance are not treated as obstacles to overcome. Both are taken as indications that there is a possible conflict that needs to be addressed. MOL therapists might make suggestions, but usually this is merely to find out what the client thinks of them, not to get the client to adopt them. "You're mad at your boss? Are you thinking of quitting your job?" This doesn't go so far as to recommend the action, but it brings the possibility to attention, and the client may indicate that while quitting might be very satisfying, there are other reasons for not doing it such as needing an income. This reveals that there are two incompatible goals at work, and by investigating them, the client may resolve yet another conflict -- perhaps an important one, perhaps not.

In MOL, therefore, all therapeutic tactics that involve the therapist's trying to manage the client's reorganizations are avoided. This means that not only advice, but interpretations, homework, exercises, analysis, and diagnosis are avoided (except, of course, when the last is needed for insurance purposes). Each case is treated as unique, and the only immediate goals of therapy are for the client to be aware at higher levels and, when conflicts are encountered, for the client to reorganize and resolve the conflict. The reason for adhering to these goals is only that doing so appears to be what works best for eventually solving the client's problems; these are not principles to be followed for their own sake.

Guiding the client to higher levels of organization is accomplished by the therapist's following the client's lead. The client is invited to discuss whatever problem comes to mind. The therapist attempts to understand what the client is talking about, asking questions when it's unclear, and encouraging the client to provide details.

What the therapist is listening for, however, is not the problem the client is discussing and aware of. If reorganizing at that level would solve the problem, it would already have been solved. In fact, the therapist has to remember consciously not to get involved in the content of what the client is saying. That sort of involvement leads to problem-solving and giving advice and not to "going meta.". What the therapist is listening for are indications of background thoughts that might lead up a level.

All the therapist has to do to get the client to go up a level is to ask a few questions about the background thought. If the person says "I'm not saying this very well," the therapist might ask, "Does that bother you? Tell me more about that." If the client says "not much, really" or "Stop interrupting me," the therapist may abandon the original question. If the client finds the background thought interesting and elaborates on it, the therapist then asks for more details, the kind that require the client to look more closely, such as "what bothers you about not saying it well?" If the client simply isn't interested, the correct kind of comment is, "Never mind, go on."

Originally, the client may feel frustrated by not communicating well, but have such a narrow focus on the content of the communication that the frustration remains unaware. The goal is to communicate well and there is a perception of not doing so, so the client is wishing to control better -- but is reorganizing the words rather than the intents behind them.. Reorganization may show up as paraphrasing or novel modes of expression, both unsatisfactory to the client. But when a question is asked about being bothered by not communicating well, the person has to switch attention to the sense of being bothered and describe that -- which means he can't be in that point of view. The client theoretically has to find some other point of view from which the "being bothered" phenomenon can be seen rather than just being acted out.

That other point of view seems likely to be at the next level up. And it is common, as soon as that next

level appears, for the affect, the feeling of being bothered, to disappear. Reorganization can happen almost instantly. The result isn't necessarily better, but it's different. If the new organization doesn't lead in the "better" direction, another reorganization will follow immediately. The changes will not stop until the new direction of change is in the better direction. Then reorganization will turn off, and changes in the new direction will continue as long as intrinsic errors keep getting smaller. As the errors get smaller, any reorganizations that do occur will make smaller changes, until there is too little error to keep reorganization going. Modelers among the readers will recognize that this is an algorithm for a working model of reorganization (Chapter 7, Powers 2008).

Progress up the levels, as mentioned, seems to end when a conflict is encountered. At that point the emphasis shifts to examination of the conflict. The point is to identify what the actual conflict is, and then keep going over both sides of it until both sides can be held in awareness at once. The point of view is no longer centered in either side of the conflict. It is assumed that during this process, reorganization is focusing where awareness is focused and changes of organization are occurring. Now the causes of the conflict are being reorganized rather than the effects of the conflict. Nothing further is required. Once awareness and reorganization are focused on the higher systems that are issuing the opposing requests for perceptions from the same lower system, those higher systems will begin to change. The conflict will dissolve -- or perhaps that should be stated as a question to be answered experimentally: does the conflict then dissolve, and is the result the disappearance of the problems that were caused by the conflict? My own answer to that question is simply "Yes, always." But for the method of levels to be accepted by clinicians, answers from others are needed.

### Conclusions

All therapists try to "listen with the third ear" and see behind the surface appearances a client presents. All successful therapists try to guide the client's awareness to what might be the real problems being suffered. All therapists want their clients to discover new points of view from which their problems will look different. All therapists must recognize somehow that there are conflicts, and that conflicts are problems that must be solved. And all successful therapists must realize, eventually, that only the client has a means of changing what is wrong. In these regards, the method of levels focuses on what most therapists already know or discover to be effective.

But many therapists do other things that PCT would imply are ineffective or even contraindicated, even while they manage to direct attention to higher levels. They give advice, but not knowing what problems following that advice would cause in the client's life, discover that the client resists it or or despite agreeing to it, is unable to follow it. They diagnose or otherwise categorize a patient, and as a consequence think that patients in the same diagnostic category must have the same problem -- which they then try to "treat" according to what seems to work, sometimes, with other people. They have people talk to chairs, or roll their eyes, or go through other rituals -- all the while having the patients explore different kinds of experiences and talk about their problems in ways that sometimes lead them to reorganize appropriately to the problem. They get the client to dwell on past events, which can never be changed, instead of examining how they are thinking about those past events right here in present time. Many therapists, in short, while doing things that would be considered effective in MOL, also may work against themselves and get in the way of therapy. These therapists, I suggest, would find more and quicker success by dropping the techniques that are not part of MOL, while retaining the techniques that are.

The method of levels is basically a simple approach involving only a few principles, but it is very hard for many therapists to stick to those principles instead of doing the things they have always been taught to do. Experience shows MOL practitioners how quickly doing any of the conventional things such as giving advice or offering interpretations shuts the MOL process down. Experience shows how easy it is to get entangled in the content of the client's narratives, and how strong is the temptation to stand beside the client and try to solve the client's problems. It is hard to maintain the MOL attitude, which is simply that the therapist wants the client to find what needs to be fixed, has confidence that the client's reorganizing system will do its job, and has the humility to know that it is not the therapist who gets the client well.