

Stepping Into the Same River Every Week: Parmenides, Heraclitus, Chaos Theory, and the Nature of Change in Group Psychotherapy

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ABSTRACT

The desired outcome of group psychotherapy, indeed, of any psychotherapy, is therapeutic change. But is fundamental change possible, or is there only a rearrangement of a preexisting state? This paper explores the question of the existence and nature of therapeutic change from the perspectives of the Greek philosophers Parmenides and Heraclitus using concepts from chaos theory to examine the process. I conclude that the actuality is a melding of the two ideas; that change occurs within continuity, and that continuity requires change.

Keywords: group psychotherapy, chaos theory, philosophy

The question of the nature of change, or if one can say that change even occurs, goes back at least two and a half millennia to the Greek philosophers Parmenides and Heraclitus. What may seem to be an academic argument about whether fundamental change is possible, or if seeming change is just a rearrangement of existing elements, bears relevance to the practice of group psychotherapy because it addresses the question of what we are actually hoping to accomplish in our work. Are we looking to simply improve functioning and/or alleviate symptoms, or are we attempting to bring about deeper changes in how a person perceives, experiences, and acts? Further, is this a true or

a false dichotomy? I believe that fundamental change is possible, but within the bounds of what is available to us as a species, and understanding the nature of that change involves viewing the therapy group as a complex (chaotic) system.

PHILOSOPHICAL ANTECEDENTS

Parmenides was a Greek philosopher of the 5th century BCE who “authored a difficult metaphysical poem that has earned him a reputation as early Greek philosophy's most profound and challenging thinker who... so challenged the naïve cosmological theories of his predecessors that his major successors among the Presocratics were all driven to develop more sophisticated physical theories in response to his arguments.”

(Palmer) Among other things, he postulated that change was impossible: “As yet a single tale of a way/ remains, that it is; and along this path markers are there/ very many, that *What Is* is ungenerated and deathless,/ whole and uniform, and still and perfect ...” (in: Palmer)

Anaxagoras, another 5th century BCE Greek, put it this way: “The Greeks do not think correctly about coming-to-be and passing-away; for no thing comes to be or passes away, but is mixed together and dissociated from the things that are. And thus they would be correct to call coming-to-be being mixed together and passing-away being dissociated.” (Curd, 2011)

Heraclitus, “a Greek philosopher of Ephesus (near modern Kuşadası, Turkey) who was active around 500 BCE” (Graham) took the opposing stance. “He is best known for his doctrines that things are constantly changing (universal flux)...” (Graham). This is most often represented by a quote along the lines of “No man ever steps in the same river twice, for it's not the same river and he's not the same man.” (www.thinkexist.com). This

quotation presumably comes to us via Plato: “Heraclitus, I believe, says that all things pass and nothing stays, and comparing existing things to the flow of a river, he says you could not step twice into the same river. (Plato *Cratylus* 402a = A6)” (Graham). There is some disagreement about this, however; that Heraclitus’s original words actually were “On those stepping into rivers staying the same other and other waters flow. (Cleanthes from Arius Didymus from Eusebius)” (Graham, 2011) and that the meaning is

not that all things are changing so that we cannot encounter them twice, but something much more subtle and profound. It is that some things stay the same only by changing. One kind of long-lasting material reality exists by virtue of constant turnover in its constituent matter. Here constancy and change are not opposed but inextricably connected. A human body could be understood in precisely the same way, as living and continuing by virtue of constant metabolism—as Aristotle for instance later understood it. On this reading, Heraclitus believes in flux, but not as destructive of constancy; rather it is, paradoxically, a necessary condition of constancy, at least in some cases (and arguably in all). (Graham, 2011).

Physicist Richard Feynman put it this way,

...the scientific article may say, ‘The radioactive phosphorous content of the cerebrum of the rat decreases to one-half in a period of two weeks.’
Now, what does that mean?

It means that the phosphorous that is in the brain of the rat - and also in mine, and yours - is not the same phosphorous as it was two weeks ago.

It means the atoms that are in the brain are being replaced: the ones that were there before have gone away.

"So what is this mind of ours: what are these atoms with consciousness? Last week's potatoes! They now can remember what was going on in my mind a year ago - a mind which has long ago been replaced.

"To note that the thing that I call my individuality is only a pattern or dance, that is what it means when one discovers how long it takes for the atoms of the brain to be replaced by other atoms. The atoms come into my brain, dance a dance, and then go out - there are always new atoms, but always doing the same dance, remembering what the dance was yesterday.

(Feynman, p.244)

What is agreed upon is that Heraclitus believed that the nature of all things is change; that our world is dynamical, not static.

CHAOS THEORY

Chaos theory (or chaos science) is the study of complex, nonlinear, deterministic, dynamical systems. Most of the real world is composed of systems of this type. They are *complex* in that they have many possibilities of interaction between their parts, and indeed may be made up of a huge number of parts to begin with. For instance the number of air molecules in a weather system may as well be infinite when it comes to treating them as discrete members of the system.

These systems are *nonlinear* in that knowledge of their history is not sufficient to predict their future course. They do not lend themselves to simple extrapolation like *A* led to *B* which led to *C*. Therefore, the next step is *D*.

Chaotic systems are *deterministic*. They are not ruled by random chance; every occurrence in a chaotic system is attributable to causality. The unpredictability of the chaotic system is inherent in its complexity and/or its high degree of susceptibility to small levels of input.

Finally, chaotic systems are *dynamical*. They interact internally and with the outside world. They can change over time. They not only have a process, but a process of process.

A therapy group also shares additional characteristics with living systems. It is *adaptive*, changing itself over time as it interacts with the greater environment. It is also *autopoietic*, a self-organizing and self-maintaining entity.

A key element of chaotic systems is *sensitive dependence on initial conditions*. This is more commonly known as the *butterfly effect*. At certain points in the life of a complex system, conditions are such that a very small input can create a cascade of effects that results in a large change in the state of the system. This is one of the elements that render chaotic systems inherently unpredictable.

Nonlinearity is not random. There is cause and effect, and a cause-effect trail can often be constructed after the fact. In group therapy, process is complex to the point of making it impossible to predict a future course with any certainty, including outcomes. Add to this the fact that in human psychology much of the causes and effects are unconscious and thus effectively invisible.

In therapy, change is often non-linear. When a new insight is achieved, it is often perceived as a "bolt out of the blue". The linear explanation for this is that over time more and more pieces of the puzzle, many of them unconscious, have been painstakingly put together until finally the last piece is fit in and a new gestalt is formed. Even if this is the case, there are many bifurcations or "choice points" along the way that can significantly affect the outcome, and these bifurcations may be so small as to be unremarkable or even unnoticeable in real time.

A non-linear (chaos theory) explanation for this phenomenon would involve a more or less random-*appearing* destabilization of previous rigid patterns, with the abrupt change arising out of a combining of "minor" changes into one irreversible new vector. This would explain the absolute unpredictability of new insight or therapeutic growth. No theory successfully predicts just when *and* how it occurs. "While nonlinear equations elegantly model such chaos and give scientists deep insight into the way such complex events unfold, they do not allow researchers to predict exactly when and where the next [event] will come. ...in the non-linear world - which includes most of our real world - exact prediction is both practically and theoretically impossible " (Briggs & Peat, p.24).

The role of the therapist, then, becomes that of destabilizing the patient or the group in particular ways that encourage this process. The therapeutic relationship itself, in its uniqueness, is a part of that destabilization, as it confronts the patient and challenges him or her with a hitherto unknown way of being related to.

...an effective [group] leader wears two faces: conservator and revolutionary. He or she introduces principles and practices that normalize dyadic and group relations and provide a sense of cohesion, continuity,

and regularity. Yet to be constructive and seek the qualities of emotional truth that lead to growth, such an individual is also deconstructive, encouraging the individual and the group to question and challenge the very principles and practices that he or she asserts." (Billow, 2010, p.3)

This way of envisioning the process of therapeutic change can be much more threatening to the therapist than linear, deterministic models. It is unpredictable and uncontrollable. The element of change is the process itself, irrespective of the particular interventions of the therapist, though the interventions are themselves part of the process. This process is not random, but possessed of its own order. I see this as a phase change from one relatively stable, though less adaptive, level of functioning to another relatively stable, more adaptive level of functioning, though it can also go in the reverse direction. It is discontinuous, even when occurring amidst more changes.

Even in gradual-seeming therapeutic change there must exist a "point of no return" beyond which a new perspective, tentatively held and considered, becomes integrated into the patient's permanent experience of him- or herself and the world. Even non-therapeutic changes in everyday life follow this paradigm. The incidents that trigger major life insights and changes are often, in themselves, trivial-sounding, even though the effects can be "earth-shaking" to the individual. This phase change through induced destabilization may explain the success (when it's successful) of more invasive and dramatic interventions such as electro-convulsive therapy.

HOW IS A THERAPY GROUP A CHAOTIC SYSTEM?

At first glance a therapy group of, say, eight members appears to be a simple system with a large, but manageable, number of possible interactions. Remember, however, that

the members of this system (human beings) are quite complex and can interact with each other at many different levels and intensities. Over time, the number of possible interactions and combinations of interactions between just two people is staggeringly large, and when one imagines the number of possible interactions in a group, it may as well be considered infinite.

Given this complexity and the real possibility that any input into the interpersonal field from one member can have unpredictably large effects, which in turn can have unpredictably large effects on others, one is most certainly dealing with a chaotic system. At any point, a small input can produce a large or small effect depending on whether it is amplified through positive feedback, perhaps, or dampened by therapist intervention, or by group action or inaction.

At any point the group can escalate any tendency such as anger, fear, non-communicativeness, competitiveness, lethargy, etc. or cycle between tendencies as in an over-expression of anger leading to a reaction of withdrawal, cycling back to anger, etc. Some therapeutic modalities undoubtedly and unknowingly encourage and use this tendency. The rate of iteration of the group cycles and of the individual members is very important in determining when or whether a group will "reel toward chaos". In most cases, a group that has chaotically spun into one extreme mode of behavior, or cycles between two (or more) feels to the therapist and to the members as being "out of control", in that they do not feel able to change it to another way of functioning.

The most likely modes of functioning of a particular group, based on the leader, members, and established group norms, can be viewed as "gravitational" attractors, and, like being drawn into a gravity well, the closer the group orbits one attractor, the more

difficult it is for it to extricate itself. Here the forces of chaos are at work, as a combination of inputs from different members can either cancel each other out, or add and throw the group out into an orbit around another attractor. This can happen in an instant, discontinuity being a characteristic of chaotic systems.

It is here that openly looking at process within the group can be effective, as it takes some of the randomness out of the system. A non-self-aware, non-self-regulating system, be it an individual or a group, is at the mercy of randomness. "Anything might be a seed [of chaos] if it's in the right place in the right dynamic. Iteration pumps microscopic fluctuations up to macroscopic scale" (Briggs & Peat, p.75).

I do believe that this has been the case in many "leaderless" groups. Unless there is a strong arbitrary set of guidelines, as in a 12-step program study group, the potential for chaos is high, and due to the sensitivity to initial conditions in such a complex system and the iterative function of interpersonal feedback, unpredictable. Examples include the real Synanon (<http://en.wikipedia.org/wiki/Synanon>) and the fictional "Lord of the Flies" (Golding).

THE LINEAR PATH THROUGH NONLINEAR PHASE SPACE

Phase space is composed of as many dimensions or variables as the scientist needs to describe a system's movement. With a mechanical system, scientists usually map the system's phase space in terms of position and velocity. In an ecological system, the phase space might be mapped as the population size of different species. (Briggs & Peat, p. 32)

Phase space is not an actual physical space, but a mathematical graphic representation of the variables a system may exhibit. In a therapy group this could be

behaviors, emotional states, themes, etc. Groups may “move” gradually from one “location” in phase space, or instantaneously “jump”. In the moment, this may not make sense. Someone might have an extreme reaction to a seemingly innocuous comment, which in turn throws a placid-seeming group into uproar.

While the paths of the group and the individual members are discontinuous as they unfold, sense can often be made of them in retrospect. Thus the phase space of the group is nonlinear, but the paths become linear as we make sense of them. It can be argued that the linearity is imposed *ex post facto*, but from a phenomenological point of view the description we construct of the paths and the meanings we derive become our reality. In this case, I believe that a “hard” phenomenological viewpoint is applicable. This supposes that our remembered paths can be reconstructed at a later time and new, different meanings can be derived and that this, in turn, becomes part of our ongoing unfolding reality. That this occurs should come as no surprise to students of psychology or history. Humans do not like nonlinearity, so we tend to create narratives that organize experience in a linear fashion. I believe that it is important to hold events in the group open as long as necessary before closing them down into a linear story (or stories). By this I mean the organization of the recent experience. As I will discuss later, story telling of past life events is a different situation and can be a nonlinear process in itself.

This view of group process is not irreconcilable with a developmental view in which the group matures through stages of development. It is much like Darwinian evolution which, when viewed from a known point looking backward seems linear, with every bifurcation leading logically and inexorably to the known state. When, however, one immerses oneself at any point, including the present, and tries to predict evolution, the

chaotic complexity and introduction of random iterative elements makes this impossible. One may be able to develop a model of stages of group development, as many have, yet one cannot use them to predict where an individual will be, or how he or she will change, as a result of the group going through its developmental process.

Indeed, as with attempts to "derandomize" evolution, one can impose developmental models on group process that enable one to find whatever one is looking for. "...the pathways that led to our evolution are quirky, improbable, unrepeatable and utterly unpredictable. Human evolution is not random; it makes sense and can be explained after the fact. But wind back life's tape to the dawn of time and let it play again - and you will never get humans a second time." (Gould, 1991) Just so, the "evolution" of the individual psyche, much less a group, is not random; anything can't happen. But as explainable and understandable as it may be after the fact, by whatever theory one may choose to apply to that task, it is not predictable. It is not random and it is not linear.

LINEAR AND NONLINEAR PROCESSES

All group processes have elements of linearity and nonlinearity. In general, linear processes favor the *status quo*, or at least a rearrangement of elements of the *status quo ante*. A prime example of an individual process that is a ubiquitous element of group process, indeed of everyday life, is transference. Transference involves re-enacting or re-experiencing relationship events from one's past, usually childhood, in the present, usually with a different object. Since it tends to play out in much the same way as the original event, transference tends to be predictable and linear. It is an example of something that changes (time, place, person) yet stays the same (interaction, feelings, overall experience). Though Parmenides may not have used this as an example of the

unchanging nature of reality, it is certainly in his vein. If it is an example of change, it is only an example of first-order change in which the time, place, players, etc. may be different, but the process remains the same. Indeed, much of our life is made up of behaviors, interactions, experiences, etc., that follow long-established patterns. Not all of these are transference; they may include repetition-compulsions, addictive behaviors, or just habits that have come to be reinforced over time. This often works to our advantage, when tried-and-true solutions continue to work adequately. Unfortunately, this also can break down, particularly when the original solution no longer fits the current situation. “First-order change is doing more – or less – of something we are already doing. First-order change is always reversible” (thenationalacademy.org).

“Second-order change is deciding – or being forced – to do something significantly or fundamentally different from what we have done before. The process is irreversible: once you begin, it is impossible to return to the way you were doing before” (thenationalacademy.org). In dealing with transference, this would mean that the here-and-now interaction is no longer experienced as if it were the original one, and there can be a change in the outcome. Group therapy can be particularly helpful in this regard, in that multiple transferences can form and be explored, and new behaviors can be tried out and new experiences can be had.

There can also be recurring patterns of interaction which are not transference-based, but learned and reinforced more recently. As with transference distortions, applying these patterns in situations that are not the same as the original, but which may feel the same, leads to solutions that are less than optimal. Whether one ascribes this repetition to unconscious psychodynamic process or to something else, such as secondary gain, is

immaterial in that, as long as the same rules are applied, the same unsatisfactory outcome is likely.

However it is effected, the relinquishment of a pattern puts one into the uncomfortable position of having an old problem without the old solution, however ineffective that solution may have been. This is the experience of chaos in the group. The future is now formless and new behaviors will have unpredictable outcomes. The challenge is to explore the new territory, tolerate the anxiety, and creatively find new solutions. The individual "steps into the same river" but neither he nor the river are the same.

Here nonlinearity becomes a therapeutic factor. In a psychotherapy group, not only can new ways of interacting with others be tried out, but new and unexpected responses can ensue. As the individual group member makes her way through this unexplored territory, she and her fellow members, can find new and more adaptive pathways. There is opportunity for creativity, for surprise, for new feelings, not just on the part of the one individual, but of everyone in the group, including the leader. This experience of chaos can be threatening to the leader, however. It certainly can raise anxiety, though this is not always a bad thing. Unfortunately, there can be a tendency to contain the nonlinearity by imposing linearity.

When a group leader is unaware of the chaotic order involved in group process and feels overwhelmed by the chaos, the tendency may be to attempt to push the group back into a more static and linear mode of functioning. This will often be done from a theoretical idea of how a group "should" function, but unconsciously it is in the service of controlling the leader's own anxiety. Ramon Ganzarain put it this way: "In an effort to

avoid chaos, clinicians may artificially narrow their focus, and, instead of realizing the kaleidoscopic views of the complex problem ..., may adopt stereotypes in an effort to understand it" (1989, p. 140).

In a group I led as a beginning therapist members began leaving a group, one by one. They each complied with the group rule of announcing their termination and taking several meetings to process it. They all spoke about how much they liked the group, and me, but that it was time for them to move on. None of them seemed to me as if they had successfully completed any of the goals that had brought them into group in the first place. I was quite shaken by this, but all I felt I could do at the time was to keep showing up and let it run its course.

Later I came to realize that I had been leading a "nice" group. This served the group's - and my own - defensive wish to avoid conflict with all its inherent anxiety. So, while the group was supportive and comfortable on the surface, there was no avenue for the expression of feelings of hate or hostile aggression. It became a *fight-flight* group (Bion, 1961, p. 63), in which the only options for dealing with these feelings seemed to be to engage in open conflict or to flee the scene. Since the first option was foreclosed by the group's norm of "niceness", individuals began exercising the second option in the nicest possible way. I had been unconsciously restricting the range of the group members' expression in the service of protecting myself from the emotional chaos of conflict.

Irvin Yalom addressed this in another specific context. "The leader who prescribes structured tasks for a group runs the risk of establishing norms that impede the group from developing into a potent therapeutic force. Members of a highly structured, leader-

centered group begin to feel that all help emanates from the leader; they await their turn to work with the leader; they deskill themselves; they cease to avail themselves of the help and resources available in the group. They divest themselves of responsibility" (Yalom, p. 454).

The group can be complicit in this endeavor as they, too, may feel threatened. They may look to the leader to take control and structure the group process. One method is a "take turns" format in which every group member is given a specific, equal, amount of time to speak. This is often couched in terms of "fairness", but it might be more clinically viewed as a defense against the nonlinearity of more free-form modes of interacting. The therapist may be drawn to this out of his or her own anxiety, a sincere desire to be "fair", or a need to please the group members.

Heraclitus's stream metaphor can be extended here to look at the nature of the stream itself, and what characteristics are conducive to therapeutic nonlinearity. Sometimes a group seems to flow smoothly along, with the members "doing their work" in a neat, clean, and tidy manner. This can feel very satisfying to leader and members alike, and there can be some utility in it. Unfortunately, it forecloses processes that truly explore new responses and behaviors that could lead to deeper and more enduring change. To continue the metaphor, this would be akin to *laminar flow* in fluid dynamics.

What is more conducive to therapy, however, is *turbulent flow*. Not only does the water get mixed up more thoroughly, but material is dredged up from the bottom of the stream and enters the mix. Obstacles that seem to impede progress become additional sources of complexity and can create eddies in the current in which the flow pauses, or even reverses itself temporarily. These recursions may be experienced as regressions in

the development of the group which, when looked at can provide a valuable opportunity for revisiting incompletely worked-through material and deriving new meanings from it. The group therapist who understands this comes to value these seeming problems as opportunities.

Group process is nonrandom and nonlinear. It is subject to influence by random events, but there is order and expectability within the seeming chaos. The group does not proceed from any one point or stage to another in a direct linear fashion; there are recurrent regressions, meanderings, etc. It is in these recursions, when the group turns in on itself, that the work of the group lies. Group members and leaders may be frustrated by what seems to be an interruption in the "progress" of the group, but the paradox of group process is that often the recursions and interruptions *are* the progress or are in the service of the progress of the group, and smooth linear flow its "stuck place".

Some processes are not so readily categorized as linear or nonlinear. Structured exercises, for example, may start out quite controlled and linear, but, if allowed or encouraged to do so, can evolve into more open interchanges which can take the group into the realm of therapeutic chaos. Specific interventions by the therapist, such as directing members to speak to individuals rather than the whole group, the therapist, or the middle of the floor, can lead to nonlinearity. What is essential is that the therapist has a goal of opening up the process rather than limiting it.

I once inherited a group from a colleague who was moving to another city. She had developed a particular rubric which involved an individual in the group going through a specific exercise, then getting feedback from the group. Before leaving, she trained me in this process and I co-led the group with her for a couple of months. After a while, it

began to feel limiting to me, and, I believe, to the group as well. After dealing with my own guilty feelings about changing “her group”, I decided to open the group to a more spontaneous process, and ultimately discarded the rubric altogether. The group welcomed this and I believe that the work broadened and deepened as well.

One of my favorite examples of a common group process that can go both ways is advice giving. Everyone becoming a psychotherapist “knows” that advice giving is frowned upon as anti-therapeutic. The patient must find his or her own solutions, must “own” his or her own choices, etc.

It was in a long-term 12-year consultation group of which I was a member that I began noticing an interesting phenomenon. A group member would bring in a problem and the group would dutifully begin to problem-solve. Just about everyone had good advice – though we often contradicted one another. One would think that the outcome would be for the first member to choose the solution he or she thought best (or most ego-syntonic) and endeavor to apply it. This rarely happened.

What most often happened was that, at the next meeting, the member would report doing something quite different from any of the suggestions. “I thought about what everyone said, and this just came to me. I think it worked rather well!” The process of considering various alternatives itself opened the group member to broader, more creative thinking. Of course, this all happened within a group that had norms that encouraged this, so a seemingly linear process was rendered nonlinear.

Another example of this duality is “story telling”. I think that it is important for us to tell the story of events in our lives to others who are willing to listen and respond to us, and to tell the stories multiple times. This can be a healing experience and lead to

increased intimacy. Of course, it can also be simply be a dull recitation, devoid of new meaning. My mother was fond of telling stories about her experiences with other people. Early on I realized that, though the characters were different each time, the story was always the same: “after all the good things I did for these people look at how (badly) they treated me!” Unfortunately, she was never able to see this.

What makes the difference is how we, the teller and the listeners, attend to the story each time. What does it evoke in each of us? How is a member’s tale of abuse or disappointment or triumph presented each time? Is there a change in affect, in ascribed meaning, in the connection to the member’s current life, in the resolve to change and grow, in deepening understanding and connection with other group members?

Even though the stories themselves are in the “there-and-then”, the responses to them by the group and the teller are in the “here-and-now”. The deadening linearity of simple repetition can be transformed into an ongoing unfolding of new meanings and more adaptive responses when there is an openness to reinterpretation of what seems to be the same story and to the responses that are evoked in the other group members.

THE ROLE OF THE GROUP THERAPIST

The art of progress is to preserve order amid change and to preserve change amid order. Alfred North Whitehead (1861-1947)

How do psychotherapy group leaders cope with the almost infinite coordinates representing a group’s position in phase space? If he or she allows anything and everything then the group cannot survive as a discrete entity; boundaries are essential to the existence of any organism. If he or she imposes too much structure, then creativity, individual responsibility, and efficacy become stifled, maybe allowing for learning, but

not real therapeutic growth. Bear in mind, though, that, at times, things can get “creatively messy” and an appreciation for these moments can add clinical richness beyond any purely technical considerations.

So some degree of freedom is necessary, as is some degree of containment. There must exist a dynamic balance between them for the group to function and perform its therapeutic task. This is not a “middle ground”, however. It must be a mix of these two attributes; not a unity of opposites, but opposites creating a unity.

So how does a leader manage this? He or she must allow freedoms and impose limits fluidly, always keeping in mind the goal of maintaining a rich enough mix while appropriately bounding the accessible phase space of the group. This can be done by

- limiting the coordinates through exclusion. Some factors are deemed to be nonimportant or little enough significance that they can be generally ignored. There is always the risk of ignoring something that is significant, however. For example, political orientation may be considered to be not a fit subject for group discussion because of the risk of polarization or disruption. A person’s political beliefs, however may lend insight into his or her psychological or emotional state. The same is true with issues around age, race, religion, national origin, culture, education, etc. Being attentive to latent content behind the manifest content is always important but, in practice, limits must often be applied, because the phase space of the group has such a great (almost infinite) number of axes that there is no way they can all be considered at once.

- limiting the coordinates through prioritizing. Choices are constantly made as to which factors are considered at a given time. Other, also important, factors can be dealt with later.
- expanding the coordinates by challenging the group to venture into hitherto unexplored territory.
- establishing group norms that encourage curiosity and personal risk-taking.
- the leader's being willing to be wrong, look foolish or evoke negative responses in the service of spontaneity and creativity.

Factors that limit the therapeutic efficacy of the group can include

- unawareness. Factors the group leader is simply not aware of may be significant but will not be directly addressed. This can be the result of naiveté, countertransference, life distractions, etc.
- group norms. The group, with the complicity of the leader, may shy away from certain uncomfortable areas, such as sex, aggression, or money, or certain behaviors such as challenging the leader.
- the group contract. The group may be structured in such a way, perhaps for the sake of efficiency, so as to not address certain factors in order to concentrate on others. This is done through mutual prior consent.

CONCLUSION

So Heraclitus, Parmenides, and Anaxagoras have reached through the centuries to help illuminate a discussion on chaos theory and group psychotherapy. Which of them best elucidates the process of a well-functioning therapy group? The group does fit the

commonly-cited quotation of Heraclitus that we cannot enter the same stream twice.

Clearly both the group and the members are ever-changing, and each meeting is going to be somewhat different as a result. Being attentive to those differences, and determining which are indications of progress is part of successful group practice.

But it is also clear that, as Anaxagoras wrote, we are made up of the same elements that get juxtaposed and rearranged into new patterns. We are human, and only human.

Tolstoy put it this way:

One of the most widespread superstitions is that every man has his own special unique qualities; that a man is kind, cruel, wise, stupid, energetic, apathetic, etc. Men are not like that.... Men are like rivers; the water is the same in each, and alike in all; but every river is narrow here, is more rapid there, here slower, there broader, now clear, now cold, now dull, now warm. It is the same with men. Every man carries within himself the germs of every human quality, and sometimes one manifests itself, sometimes another, and the man often becomes unlike himself, while still remaining the same man." (Tolstoy, Chapter LIX)

Maybe the assertion that what Heraclitus really meant was "that some things stay the same only by changing" (Graham) can help us bridge the gap. A therapy group cannot continue to exist in stasis. Either entropy will win out and the group will crumble, or the group will continue zombie-like, existing but not really alive. Change is essential, but the constituent elements of being human remain the same, so nothing really new can arise. The paradox is that a group, like any living thing, maintains its existence, its integrity, its

sameness, only through a constant process of change, but only drawing on the available unchanging elements to do so.

The resolution of this paradox comes when we view the group as a living, chaotic system. The possible permutations of the elements of being human are essentially infinite, so creativity and growth are essentially unbounded as well, bounded as they may be by our mutual membership in a single species. When a group therapist can tap into the possibilities of being human in the service of becoming better humans - more open and engaged internally and interpersonally - then group therapy is manifesting its true value as an instrument of change and growth.

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