## 1.1 Artificial Group Psychodynamics: Emergence of the Collective

Joseph Dodds

Research into computer simulation of group and cultural processes has expanded in recent years [1], including an important recent attempt to incorporate neuropsychoanalytic principles [4]. This paper argues that in order to progress we need to start "taking the group seriously" [13] and utilize psychoanalytic theories of group-level processes. Furthermore, those currently using such psychoanalytic perspectives in a variety of contexts have a lot to gain from computer modelling. This paper aims to elucidate the key elements of three foundational psychoanalytic theories of group dynamics, those of Freud [5], Bion [7] and Jaques [11], with the goal of facilitating future computer-based implementation, and ultimately the formation of a new research field of artificial group psychodynamics.
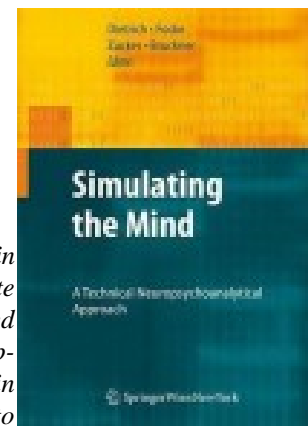
1.1.1 Introduction

Chao and Rato [4] recently attempted to improve on previous Axelrodian computer simulations of group and cultural processes [1] by implementing an agent-based neuropsychoanalytic model utilizing id-based *homeostatic* mechanisms and Freud's concept of *narcissism of minor differences* [6]. While this approach is highly promising this paper suggests social models based purely on the individual mind-brain without recourse to psychoanalytic theories of groups are necessarily limited. Psychoanalytic social models start from Freud's *Group Psychology and the Analysis of the Ego* [5] and have been developed further by Bion [7], Foulkes [9], Jaques [11], Menzies-Lyth [12], Hinshelwood [14], Young [19], Gould [15], Stacey [16], Dalal [13], Laurence [46] and others in the form of group analysis [37], group analytic psychotherapy, social psychoanalysis, systems psychodynamics, group relations [17] and a range of psychoanalytic social and cultural criticism [71]. This paper intends to elucidate important principles of psychoanalytic group dynamics for the benefit of the ENF community. Developing more formal computer models of these principles will be the subject of a future paper.

1.1.2 Potential Benefits

The potential benefits are substantial. Computer simulations could offer a powerful new research tool for those working in the various areas described above and can act as "philosophical thought experiments" [8], enabling us to test the parameters of our theories in a wide variety of situations, giving us the chance to observe how they 'work' and to follow the emergence of potentially unexpected outcomes. They also help show gaps and errors in our theories, and as with other aspects of the ENF project, the process can help psychoanalysis to gain greater conceptual clarity. Computer scientists in their turn can gain access to the highly detailed and complex conceptual and theoretical work of psychoanalysis, and especially its emphasis on affective and unconscious psychodynamic processes often ignored in other psychologies, and can thus help overcome some of the problems and deadlocks in previous attempts at computer simulations of social processes.

Certain trends in group analysis towards integrating advances in complexity and systems theories [15], [25], [31] may facilitate such a task. Current research into computer and robotic uses of swarm intelligence [24], self-organization [23] and complexity theory [22] could be harnessed towards the emergence of a new field of artificial group psychodynamics. Such research could be used to test group, individual and brain level theories, each level reciprocally supporting the others.

Artificial group psychodynamics could potentially have a wide range of applications. It is hoped that the simulations would be flexible enough to work in a wide variety of contexts such as aiding the psychoanalytically informed organizational consultant [25], constructing intelligent buildings, mapping goals in conflict resolution, studying cultural dissemination [1], racism [61], revolution, totalitarianism [59], [60], war [41], migration, globalization, terrorism and fundamentalism [18]. Time will tell whether it is an approach worth pursuing.

1.1.3 Brain, Mind or Group?

The ENF 2007 asked *should we model a brain or should we model a mind?* This paper suggests a third option, *should we model the group?* Freud argued that "individual psychology cannot be isolated from group psychology, not simply because one of the functions of the mind is to form relationships with objects, but because the individual's relationship to the object is an integral part of the mind itself. A mind without links to objects is simply not a human

mind" [5]. Here it is important to understand 'object' in the psychoanalytic sense, implying a relationship and usually a person. Modern psychoanalysis, especially as developed by the *object relations* school, building on the advances of Klein [68], [69], Fairbairn [67], Winnicott [70], Bion [66] and others, has developed Freud's initial ideas into highly complex theories of internal and external object relations. Internal objects [52] are mental representations of external objects taken into the mind through psychological processes such as introjection, incorporation and internalization, and combined with self-representations including the self-in-relation. The mind is therefore built up, bit by bit, through complex processes of social interaction.

Thus even for the individual, 'brain' or 'mind' is not enough without 'group' and, as Freud wrote, "from the very first individual psychology [...] is at the same time social psychology as well" [5]. One aim of this paper therefore is to recognize the importance of "taking the group seriously" [13] in any psychoanalytic model, not only group models, especially in more relational schools [34], [35] and ecological models of mind and society [28]. Chao and Rato's [4] use of the agent-based modelling system Repast in their research is therefore appropriate as it is designed it "to move beyond the representation of agents as discrete, self-contained entities in favour of a view of social actors as permeable, interleaved, and mutually defining; with cascading, recombinant motives" and to model "belief systems, agents, organizations, and institutions as recursive social constructions." [51]

1.1.4   Emergence and Non-Linear Group Dynamics

Potentially interesting issues in this field are the related phenomena of *emergence* [22], *self-organization* [23], *swarm intelligence* [24] and *artificial life* [27]. These ideas have been used in neuropsychoanalysis [36], psychoanalysis [29], [30], [32] and group analysis [16]. Would simulating the ENF model at the individual agent level be enough to allow for emergence of complex dynamics at the collective level, or would certain group-level phenomena need to be implemented at the design stage? Psychoanalytic understandings of groups are essential in either case as knowing expected outcomes at the collective level helps to fine-tune the model at the individual agent level, and guides the search for potential emergent dynamics. Specific hypotheses for the same initial conditions could then be made by competing psychoanalytic theories and tested to see which best describes the emerging group dynamics. This helps to reciprocally refine both group and individual level models. In addition, complexity theory is ideal for the ENF project of trying to articulate the connections between the complex interacting systems at a range of levels: neurochemical, neuroanatomical, brain, mind, group, society. It is thus invaluable for attempts to connect psychoanalysis, neuroscience, artificial intelligence and group analysis. For recent attempts to combine complexity theory and group analytic perspectives see [15], [16], [25], [58] and section 2.6.8 below.

1.1.5   Psychoanalytic Theories of Groups and Society

Psychoanalytic theories of group and social processes start with Freud's key works on groups and culture [3], [5], [6], [21] but there are many other theories in this area which further research in this area could investigate. For example the Critical Theory of the Frankfurt School [53], [54], [55], [56], the substantial work in cultural studies drawing on the French psychoanalyst Jacques Lacan (eg. [62]) or the important ideas of the co-founder of group analysis, Foulkes [9], whose theories such as the group's *dynamic matrix* or transferences in the group forming "*continuously re-integrating networks*" [9] are all highly suggestive for artificial group psychodynamics but will not be explored here but be the focus of a future study.

This paper focuses on Freud's contributions and goes on to its extensions in the Kleinian theories of Wilfred Bion [7] and Elliot Jaques [11]. Freud saw groups as an extension of the Oedipal situation of the family (the first group we are a part of). The work of Bion and Jaques extends the Freudian model, and uncovers certain areas it neglected, in particular the more primitive, psychotic aspects of groups and the importance of phantasy and anxiety as studied by Melanie Klein [48]. It is important to stress at this point that just as Freud's psychoanalysis is not only a form of therapy but also a method of studying the mind, so with the psychoanalysis of groups, which have been applied far beyond the clinic. For example in the Tavistock Institute [31], group relations conferences, the Institute of Group Analysis [37], in dialogue with open systems and complexity theories [16], and in journals such as *Free Associations* [39], *Psychoanalysis, Culture, Society* [38], and *Organizational and Social Dynamics: An International Journal for the Integration of Psychoanalytic, Systemic and Group Relations Perspectives* [25].

Computer simulations of these approaches need to take into account complex projective and introjective processes. There need to be ways of putting part of an agent into another, of redistributing internal objects among and between groups (eg. in situations of identification with the leader and corresponding introjections, or in racism where 'bad' parts of the group are split off and projected onto a denigrated outgroup.) These processes are very powerful and volatile and should be able to overcome the problem of homogenization found in Axelrodian models [2].

1.1.6   Model 1: Freud's Group Psychology

Key Concepts

(1) *Groups are bound together by libinidal ties* [5].

(2) *Emotionality and deindividuation:* Individuals in groups tend "to surrender themselves so unreservedly to their passions and thus to become merged in the group and to lose the sense of the limits of their individuality." [5]

(3) *Leader/father*. In the minds of members the leader "loves all individuals in the group with an equal love. Everything depends upon this delusion; if it were to be dropped then both church and army would dissolve, so far as the external force permitted them to". The "Commander in Chief is a father who loves all soldiers equally, and for that reason they are comrades among themselves" [5]. See also the church's 'Our Father' [26].

(4) *Directionality and volatility of libidinal ties:* "each individual is bound by libidinal ties on the one hand to the leader...and on the other hand to the other members of the group." [5]. These ties can dissolve quickly.

(5) Groups have *ambivalent* feelings of love and hate.

(6) Hostile impulses within the group are forbidden and instead *projected* as hatred of an outgroup deflecting hate from inside the group and each individual.

(7) *Love and hate as factors of cohesion*. Love binds in unity while *projection* of intra-group hostility removes it from the group and strengthens group identifications. Each member shares not only good objects (leader, ideals) but also bad objects. These processes can also be viewed with Matte Blanco's *bi-logic*. [13], [50].

(8) *Group narcissism and altruism*. Individual narcissistic interests can be partially relinquished for the good of the group, partly as the whole group is invested with narcissism. [5]

(9) *Introjection and identification*. "the earliest expression of an emotional tie with another". The Oedipal boy "would like to grow like [father] and be like him, and take his place everywhere [...] he takes his father as his ideal." Later father's rules are introjected in the form of the superego and new identifications can arise "with any new perception of a common quality shared with some other person." [5]

(10) *Group members take the leader (or god, idea) as their ego ideal* (superego subsystem [64],[65]) through *projection* and also *introject* the leader in a two-way process (Fig. 2.6.1). This can lead to ego-impoverishment, loss of individuality, increased risk of being taken over in group processes, reduced ability for thought.

(11) *Group members are identified with one another in their ego due to sharing the same ego ideal*. They therefore love each other as themselves (narcissistically).

(12) "*Narcissism of minor differences*". Small differences between groups can be magnified, another factor against homogenization [4]. Neighbouring often highly similar groups often have terrible conflicts (English/ French, Freudians/Jungians.)

(13) *Ambivalence towards the leader*. Freud draws on research in ethnography where the King is killed at the end of his reign [3], on religion where the father imago is split into god and devil [57] and the Oedipus complex where the boy wants to be like his father and obey him, but also to take his place and kill him.

(14) *Revival of the primal horde*. Freud hypothesized that civilization began when the brothers of the primitive group ganged together to kill/devour the tyrannical primal father who had kept all women to himself. Filled with remorse, the father became worshiped as a totem ancestor and rules instigated so none could enjoy his position, the rules at the origin of culture. Freud believed group life reactivates these ancient conflicts [3].

(15) *Destabilization by (unregulated) love* (bypassing the leader), especially "asocial" sexual love. Hence the many regulations/taboos around sexuality (and marriage needing approval of State and heavenly 'fathers'.)

(16) *Destabilization by neurosis*: "neurosis has the same disintegrating effect upon the group as being in love"[5]. Freud saw the ultimate origin of our neuroses in the harsh restrictions of civilization [6]. In this model agents would go 'neurotic' and abandon group life as a result of internal and external stressors.

(17) *Destabilization by hate*. The group is also in danger of being torn apart by its own aggression, not all of which will be able to be externalized onto an enemy.

(18) *Panic*. Freud describes the situation in war where the leader (the groups ego ideal) is killed. The group then moves into a state of disintegration, a group of disconnected individuals who have 'lost their head'.

(19) *Multiple identifications blur simplistic ingroup/outgroup distinctions*. Freud claimed multiple identifications and overlapping group ties help reduce inter-group conflict and war, as divisions become less sharp [41].

(20) *Oceanic feeling*. 'Mystical' feelings of merger and power as the ego feels it has expanded to include the whole group, recalling feelings of 'oneness' with mother before the painful process of individuation. Promises to overcome feelings of aloneness/powerlessness/alienation are powerfully seductive [55]. Omnipotence is a defence against helplessness, and submission to groups as a way to escape the anxiety/struggle of life [6].

Summary of Freud's Group Psychology
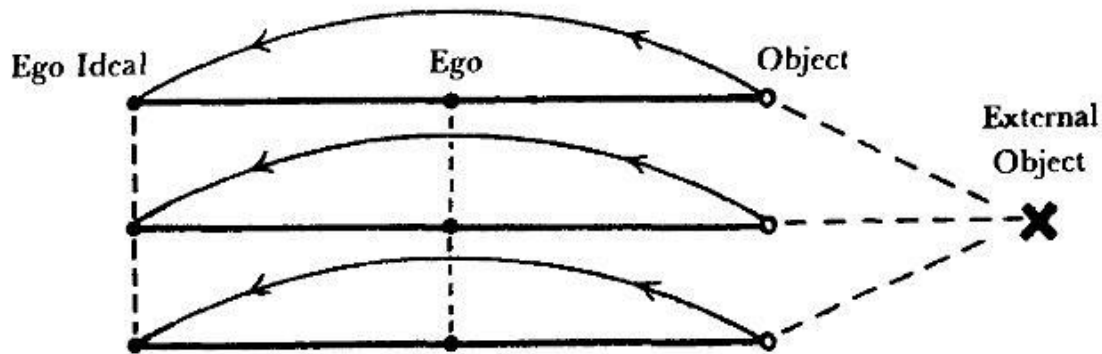

Fig. 2.6.1 Freud's diagram of group relations including position of leader [5]

[1] Group dynamics follow the model of our first group (the family).
[2] Oedipal family dynamics dominate group life.
[3] Ambivalent affects of love and hate are crucial in group dynamics.
[4] Projection, introjection, identification, narcissism.
[5] The role of the leader as the groups ego ideal.
[6] The role of the outgroup (and outgroup within).
[7] Oceanic feeling, loss of individuality/boundaries, group narcissism
[8] Group destabilized by panic, aggression, neurosis, ambivalence to leader, unregulated love, loss of flexibility, cross-group identifications

How to Model Freud's Group Psychology?

Love and hate must be in the system. Love helps bind individuals into groups, hate can break them apart, or strengthen them through mutual hatred of an outgroup. In the model when a certain number of agents come together, the mutually reinforcing ties of 'love' which are built up help in group formation, but an outlet for their aggression must also be found for the group not to be torn apart. Group formation should be facilitated by choosing a leader who would play a key role in helping focus the aggression outwards, away both from the leader and other members of the group. This may be modelled by chance interactions between agents resulting in increased binding in libidinal ties, strengthened through repeated contacts in processes of *self-organization* and *clustering*. This would be an unorganized group [21]. At some point, an agent finding itself as a central node in the emerging network, and thus able to bind more of the group to itself, would cross a critical threshold of connectivity and become the 'leader'. This would result in a phase transition and a major shift in group cohesiveness as individual agents become strongly influenced (but not completely determined) by the leaders actions. The model should also include possibilities, through further self-organization, of alternative 'leaders' appearing through libidinal ties being forged outside the individual-leader relation, potentially leading to schisms. Such transitions would probably occur through non-linear processes not directly predictable from the initial set-up. Finally, there should be the possibility of *leaderless groups*. [5]

How would projection, introjection and identification be modeled? In the case of the leader-group relationship (Fig. 2.6.1), this could occur through the individual superego modules becoming *synchronized* with the leader. This should provide tangible benefit, e.g. the reduction in use of energy or levels of anxiety, or an increase in pleasure as the ego feels it has expanded to include the whole group in an "oceanic feeling" [6]. There thus needs to be some initial differences between individual superego modules, which uniting with a leader removes (or temporarily diminishes) as individuals merge to form a relatively cohesive group. There should also be disadvantages. For although the group becomes more cohesive, reduces anxiety and energy needs, there may be a certain loss of *ecological flexibility* [28], a reduction in the ability to adapt to changes in the environment and to interactions with other groups.

The model should be able to simulate aggression towards an outgroup (war) or an outgroup within (racism). Thus a certain amount of aggression or anxiety which threatens to generate homeostatic difficulties at individual and group

levels needs to be projected onto target groups, helping group regulation by displacing intra-group and intra-agent conflict to inter-group conflict. Conflict needs to be modeled inside agents as well as between groups, e.g. between narcissistic drives and the requirements of group living [6], between id and superego modules or between neuropsychoanalytic motivational systems such as Panksepp's PANIC, LUST or RAGE systems (social attachment vs. sexual/aggressive drives) [40]. Should homeostatic regulation fail and the conflict tension surpass a given threshold, agents may become 'neurotic', breaking group ties or engaging in self-destructive behaviour. As the proportion of such agents increases there will be group-level consequences, possibly including the formation of a marginalized scapegoat group.

In terms of the various threats to group cohesion, some statistical probabilities could be used to determine the likelihood of each outcome. Threats may also lead to a strengthening of the group as individuals seek to bind themselves to the group more fully and give up more autonomy to defend against anxiety (a feature an expanded model using the ideas of Bion [7], [20] and Jaques [11] would emphasize).

Freud's model of group psychology could be implemented in the manifold contexts described above. For example, research on overcoming racism and war might be modeled by allowing for multiple identifications and overlapping group formations which are less dichotomous. Such identifications strengthen the ability of *Eros* (life drive) to bind [6] which as Freud stated in *Why War?* [41], is the main force we have to work against the destructive and seductive power of war and *Thanatos* (death drive). Finally, in terms of the impasse in Axelrod's cultural dissemination model [4], [2], the Freudian model should prevent ending up with purely homogenous cultures as there will always be constant pressures both within and without a 'homogenous' group towards change. Overall Freud's theory is fundamentally one of conflict [6].

1.1.7   Melanie Klein: PS↔D and Projective Identification (PI)

Many commentators have pointed out the limitations to Freud's understanding of group dynamics [7], [13], [17]. It is not the place to go into these here. Whatever its faults, it forms the basis in one way or another of all later psychoanalytic research in this area, and is a necessary starting point in any psychoanalytic agent-based simulation of group processes. Artificial group psychodynamics offers the possibility to test alternative models or to put them together in different combinations. Later developments in the psychoanalysis of groups by Bion [7], [20] and Jaques [11], extend Freud's model with ideas derived from Melanie Klein [48]. Klein focused on much earlier mother-infant relationships than Freud and more 'primitive' mental processes. She was a founder of *object relations theory* (along with Fairbairn, Balint and Winnicott) [35], which moved the focus away from *drives* and towards *relationships* (with internal and external *objects*), though in contrast to other object relations theorists Klein never lost sight of the importance of drives. Klein described an internal world populated by internal objects in constant complex relations with each other and with external objects. She also argued for the importance of phantasy, anxiety and envy. Artificial group dynamics might be useful in modelling the Kleinian inner world with its complex object relations (see Fig. 2.6.2)

For Bion and Jaques understanding of group dynamics it is Klein's concepts of the *paranoid-schizoid (PS)* and *depressive positions (D)* which are perhaps the most crucial. These are not the same as clinical schizophrenia or depression, or developmental stages (although PS is seen to precede D), as both can be returned to throughout life. Rather they are complex psychological/affective/self/object organizations with characteristic defences and anxieties (see appendix for more on PS and D). PS is characterized by *part-object relationships* (eg. the infant relates to the breast rather than the whole mother, who is not recognized as a separate complete person), paranoid, *persecutory anxieties* and fear of disintegration, and is dominated by the defences of *splitting* (eg. into good/bad breast) and *projective identification* (PI). The latter differs from projection as it involves projecting *into* rather that *onto* the object, subtly pressuring the object to behave in ways conforming with the projection. In PI, parts of the self are felt to reside *inside* the object and can include claustrophobic anxieties of being trapped, phantasies of controlling the object from within, or of evacuating the deadly poison inside. Bion and Jaques see PI as crucial to group dynamics. Robert Young has even claimed that PI "is the most fruitful psychoanalytic concept since the discovery of the unconscious" [42].

D is characterized by *whole-object relationships* and the object is seen to contain both good and bad aspects. This conjunction, though painful, is tolerated. The object is now separate and whole, mourning is now possible (for loss of unity and for the realization that phantasized attacks on the 'bad' object also attacked the 'good' object as they were in reality the same thing), an urge to repair the imagined damage emerges and the self becomes more integrated. Defences against depressive anxiety are developmentally more advanced and include manic defences. Bion emphasized the volatility of these positions and the way one can move rapidly between them, especially in groups, by putting a double headed arrow between them (PS↔D) [72]. Using complexity theory, PS and D can be seen as

attractors helping to organize psychic life and can be both normal and pathological. For more information on PS and D see the appendix. These various positions and psychoanalytic configurations can be depicted spatially (Fig. 2.6.2) and computer models of these may be useful to the clinician.
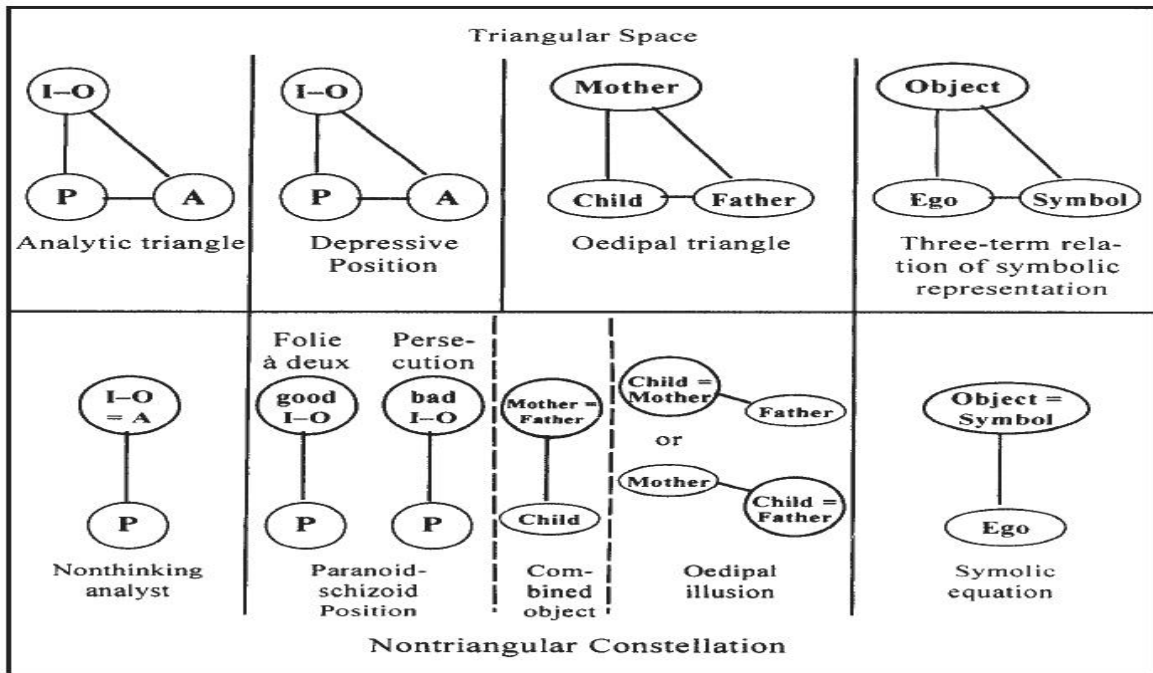

Fig. 2.6.2 Psychoanalytic configurations depicted spatially. P= patient's experience of self, I-O=patient's experience of inner object, A=analyst as object outside patient's inner world. Modified from [45].

1.1.8   Model 2: Bion's Group Analysis

The Binocular Vision

A founder of *group analysis* (with Foulkes [9]), Bion combined ideas from Lewin's field theory of groups with Kleinian object relations. According to Glover, Bion's "account was to offer new ways of bringing psychoanalytic theory to bear on issues outside the consulting room, to illuminate the wider social, political and cultural domain" [43] and is thus of great interest to artificial group dynamics, which can draw on recent attempts to relate Bion's concepts to complexity theory [58] and neuroscience [33]. In *Experiences in Groups* [7] Bion approached the *group-as-a-whole* arguing "No individual however isolated in time and space should be regarded as outside a group or lacking in active manifestations of group psychology", stressing the importance of groups to understanding individuals and echoing Freud's earlier comment on the inseparability of individual and social psychology [5].

Bion claims group and individual psychoanalysis deal with "different facets of the same phenomena", thus providing a "binocular vision" [7]. Bion observed two main trends in groups, the Oedipal dynamics described by Freud [5], and below this powerful, more psychotic aspects involving PI and PS↔D oscillations. These latter dynamics also operate in individuals, but groups allow a 'magnified' observation as the group "approximates too closely [...] very primitive phantasies concerning the contents of the mother's body [7]." The more disturbed the group the less understandable it is in terms of Oedipal family patterns. In fact "contact with the emotional life of the group" is "as formidable to the adult as the relationship with the breast is for the infant" [7]. As a result in groups adults tend to resort "to mechanisms described by Klein as typical of the earliest phases of mental life." [7]

Projective Identification and Container-Contained

Bion further developed Klein's concept of Projective Identification (PI), describing the situation where "the analyst feels he is being manipulated into playing a part [...] in somebody else's phantasy" and of the need "to shake one's self out of the numbing feeling of reality" [7]. This is a powerful way to understand how we are pulled into social phantasy systems. Following Bion, Ogden [44] divided PI into 3 stages. First, a phantasy of projecting "part of oneself into another person and of that part taking over the person from within". Second, "pressure is exerted via the

interpersonal interaction" so the recipient "experiences pressure to think, feel and behave in a manner congruent with the projection". Finally, the projected feelings are "psychologically processed by the recipient" and "reinternalized by the projector." PI underlies many aspects of psychic functioning, healthy and pathological [42].

These processes are key in intra- and inter-personal interaction and group dynamics. In a healthy *container-contained* (↔) dialectic (e.g. mother-child or analyst-patient) there can be a positive development of this process leading to psychological growth, as the containing and processing *alpha-function* of the container (e.g. analyst, mother) becomes internalized by the projector. The link between ♂→ can be commensal, symbiotic or parasitic [73] and Bion's theory of thinking itself is of a productive union between internal [72]. The ability to have a healthy and creative internal coupling is an achievement connected with D and successful negotiations of the Oedipus complex. In pathological situations, exemplified in destructive group dynamics, both sides become locked into pathological PI-circuits, each projecting and reprojecting split-off aspects of themselves, and unprocessed fragments of experience (*beta elements*) that had been projected into them by the Other. Bion's theories helps us to understand how in these contexts thinking itself is attacked, the ability to think, not just specific thoughts, in a way that resembles schizophrenic *attacks on linking* [74].

Key to 'defusing' such destructive group processes is for each side to attempt to take back their projections, to realize the extent to which the 'bad' aspects reside in their own self and group, and to which the Others' projections are accurate. This helps *metabolize* or convert *beta-elements* into *alpha-elements* instead of violently (re)projecting them and requires a certain amount of 'containing space' in order to manage the difficult and painful feelings that arise. This requires reaching D-level functioning which under intense internal and external pressures may be too difficult to maintain without powerful social containers, as tiny disturbances can result in a massive retreat to PS functioning, and a reigniting of the processes of splitting and pathological PI.

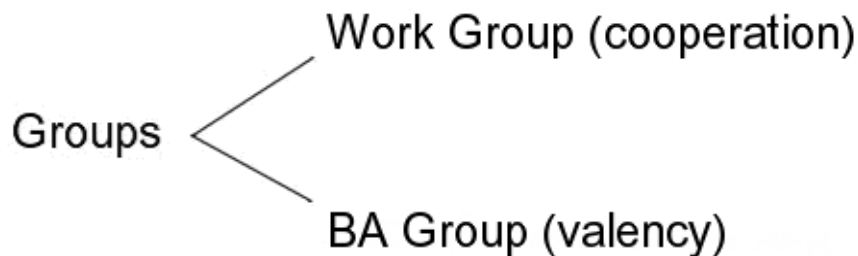**Work Group and the Basic Assumption (BA) Groups**

Fig. 2.6.3 Work Group and Basic Assumption Group

One of Bion's most important contributions to understanding groups was his description of the characteristic configurations which they form. He first divided this into two: W*ork group* functioning is the conscious purpose of the group, its 'official', reality-based ego-function. This is easily disturbed by more unconscious, primitive behaviour and thought, which Bion calls *basic assumption (BA) groups* (Fig. 2.6.3). These are not different groups, but different aspects of group *functioning,* all groups always contain a mixture of both. Pure Work Groups are impossible and would be emotionally sterile, while pure BA groups would not have enough reality-based functioning to survive for long and would be the group equivalent of severe psychosis. These groups also unite individuals together in different ways: *cooperation* (work group) and *valency* (BA). The latter "requires no training, experience, or mental development. It is instantaneous, inevitable, and instinctive". In addition, "time plays no part in it" and "activities that require an awareness of time […] tend to arouse feelings of persecution". Finally, "stimuli to development meet with a hostile response." [7]

Connected with BA groups is what Bion called *group mentality*, the "unanimous expression of the will of the group, contributed to by the individual in ways of which he is unaware, influencing him disagreeably whenever he thinks or behaves in a manner at variance with the BA. It is thus a machinery of intercommunication" and a foundation "for a successful system of evasion and denial" [7]

The Three BA's: BAD, BAP, BAFF

BA Groups
- Dependency (D)
- Pairing (P)
- Fight-Flight (F-F)
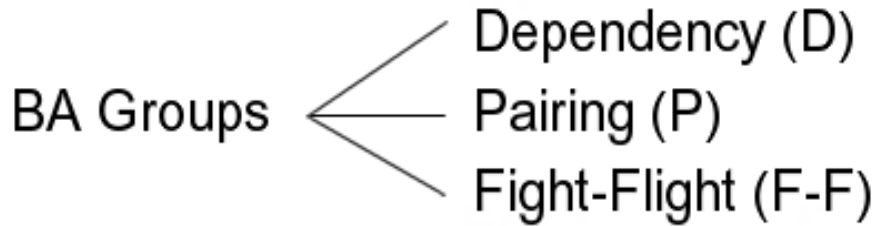
F
ig. 2.6.4 BA Groups: Dependency, Pairing, Fight-Flight

Bion identified three main BA constellations which "give form and meaning to the complex and chaotic emotional state that the group unfolds to the investigating prticipant" [7]: Fight-Flight (BAFF), Dependency (BAD) and Pairing (BAP) (Fig. 2.6.4). BA's can shift rapidly from one to another or remain long in one BA. Further BA groups have been suggested (e.g. Hopper's Incohesion: *Aggregation/Massification.* BA I:A/M [45]) and artificial group dynamics should also explore these developments. Each BA is a complex 'attractor' definable along six dimensions [10]: 1) Sources of anxiety, 2) Affects, 3) Object relations, 4) Major defences, 5) Secondary defences, 6) Adaptive/sophisticated uses [10] (see appendix for more details on each basic assumption.)

Of special interest to neuropsychoanalysis is Bion's postulate that the 'valency' of BA groups acts via what he called the "proto-mental system" in which the "physical and psychological or mental are undifferentiated. It is a matrix from which spring the phenomena", a system he designated as *pm* [7]. Bion even foresaw the possibility that neuroscience might one day penetrate this level of group reality: "If, by using a physical approach, we can investigate the physical aspect of the proto-mental system, we may find a way of sampling what the proto-mental system of a group contains at any given time, and from that make the further step that would consist in elaborating a technique for observing the proto-mental counterparts of mental events. Any developments of this nature would make it possible to estimate what the psychological state of a group would be likely to become, because we could investigate it long before it emerged as a basic assumption basically expressed." [7]
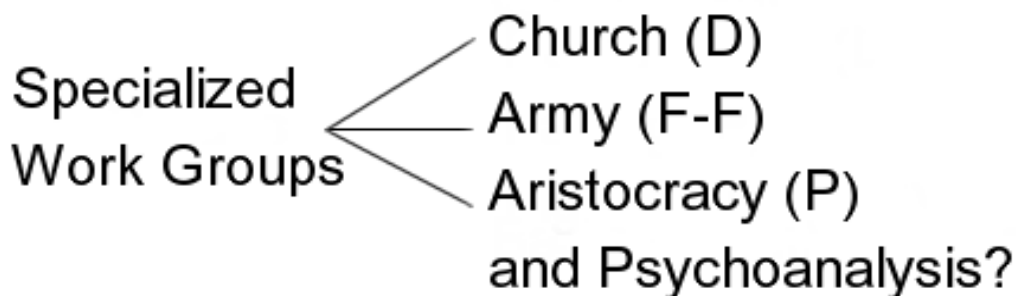
Specialized Work Groups
- Church (D)
- Army (F-F)
- Aristocracy (P) and Psychoanalysis?

Fig. 2.6.5 Specialized Work Groups

Specialized Work Groups

Taking Freud's examples of Army and Church, Bion claimed that each BA can be to some extent 'neutralized' by specialized work groups 'budded off' from the main group (Fig. 2.6.5). For example church (BAD), army (BAFF) and aristocracy (BAP). Others have proposed psychoanalysis as an example of a P group. [21]

The Leader

The group is "felt as one fragmented individual with another, hidden, in attendance", the leader, who is "the leader is as much the creature of the basic assumption as any other member of the group, and this...is to be expected if we envisage identification of the individual with the leader as depending not on introjection alone but on a simultaneous process of projective identification." In fact the leaders personality "renders him peculiarly

susceptible to the obliteration of individuality by the basic-assumption group's leadership requirements...the leader has no greater freedom to be himself than any other member of the group." [7] (e.g. in BAFF if there is no obvious enemy a paranoid leader may be chosen or a group member is driven into a paranoid state by through collective projective identification of group members).

Complexity at the "Edge" of the BA Group

Stacey [58] recently attempted to articulate Bion's group analysis with complexity theory and asks what would happen "if we move from a membrane metaphor of an organization's boundary to a fractal metaphor in which it is problematic to say what is inside and what is outside"? Self-organization theory focuses "away from regulation at a boundary to the manner in which the system's transformation process transforms itself", "from rational design and regulation to spontaneous self-organizing processes" and thus "the creative potential of disorder" [58]. Stacey argues Work↔BA group interactions create regions of stability and disintegration with potentially creative fractal regions of *bounded instability* at the *edge of chaos* between them [58] (see also Winnicott's *transitional objects* and *potential space* [63].) Computer simulations of such phenomena create unique opportunities to develop these ideas further into "a radically social understanding of individuals."[16]

Summary of Bion's Group Analysis Model
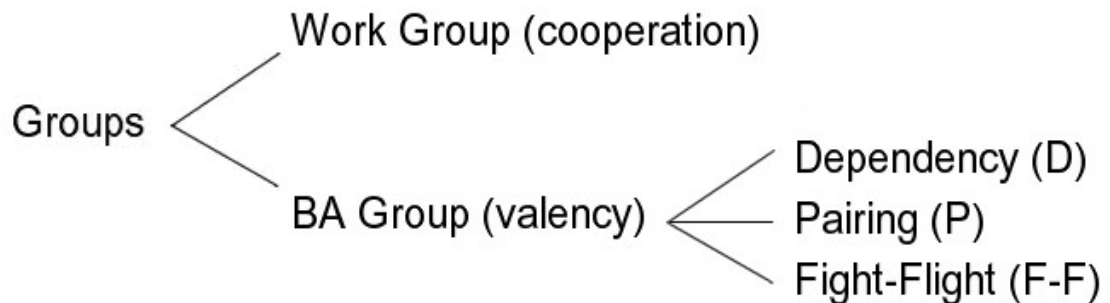

Fig. 2.6.6 Bion's Group Analysis Model

[1] Projective identification (PI), PI-circuits and PS↔D.
[2] Container↔contained. Alpha function↔beta elements
[3] Work group↔BA group (BAD, BAP, BAFF) and specialized work groups
[4] Leadership in BA groups

1.1.9   Model 3. Social Phantasy Systems as a Defence Against Persecutory and Depressive Anxiety

Key Concepts from the Jaques/Menzies-Lyth Approach

(1) Individuals make unconscious use of institutions as defence against anxiety.

(2) *Social phantasy systems (transpersonal defence mechanisms) are constructed to reduce anxiety (PS↔D).* In Menzies-Lyth's study of a nursing home these defences operated "structurally and culturally as a kind of depersonalization or elimination of individual distinctiveness" [12] including in part-object functioning (patient as number/illness/body part), effect of uniform/hierarchy/role/routine etc.

(3) *Formation of social phantasy systems.* "When external objects are shared with others and used in common for purposes of projection, phantasy social relationships may be established through projective identification with the common object" [11]. This is implicit in Freud's model (model 1 above).

(4) Groups dynamics involve interplay of projective/introjective identification

(5) *Social defences emerge through self-organization of individual defences* with a "reciprocal relationship between social and internal defence mechanisms" [11], continually effecting each other, the emergent global behaviour interacting back to lower levels in a complex, non-linear re-iterative process.

(6) *Societies provide institutionalized roles.* Occupants are sanctioned/required to take into themselves projected objects of other members. Over-rigidification of roles may lead to system instability and loss of ecological flexibility [22], [28].

(7) *Manifest/phantasy level functions.* Institutions are "determined and coloured not only by their explicit or consciously agreed and accepted functions, but also manifold unrecognised functions at the phantasy level" [11], corresponding to Bion's Work/BA group.

(8) *Social redistribution of internal objects.* Defences against PS anxiety involve putting bad internal objects into particular group members who *absorb* or *deflect* them: "objective fear may be more readily coped with than phantasy persecution. The bad sadistic enemy is fought against, not in the solitary isolation of the unconscious inner world, but in co-operation with comrades-in-arms in real life." [11]

(9) *Scapegoating.* The community is split into good majority/bad minority "consistent with splitting internal objects into good and bad [...] The persecuting groups belief in their own goodness is preserved by heaping contempt upon [...] attacking the scapegoated group". Splitting mechanisms are "reinforced by introjective identification [...] with other members taking part in group-sanctioned attack." [11]

(10) *Unconscious collusion.* Persecuted groups can at the phantasy level seek contempt and suffering to alleviate unconscious guilt, reinforcing defences against depressive anxiety and reinforcing denial to protect internal good objects.

(11) *Identification with the aggressor* [49]: "the phantasy of actually taking the aggressor inside the self in an attempt to control them, then feeling controlled by them and needing to get rid of other, threatened and vulnerable parts of the self into someone else (the new victim)." [75]

(12) *Dynamics of social change* requires restructuring *phantasy* as well as *manifest levels.* Apparent change at the manifest level may conceal lack of change at the phantasy level. Imposed social change provides less opportunity for restructuring of defences. Effective social change may require analysis of common anxieties and unconscious collusions underlying defences of the social phantasy system.

(13) *Social phantasy systems originate* "through *collusive* interaction between individuals to project and reify relevant elements of their psychic defense systems" but for each new individual entering the institution, the social phantasy system is felt as a concrete external object to which they must "react and adapt" [12].

Summary of the Social Phantasy Systems Model

[1] Social phantasy systems as transpersonal defences against anxiety (PS↔D)
[2] Individual↔social defence mechanisms.
[3] Introjective↔projective identification
[4] Institutionalized roles, hierarchies, routines
[5] Social redistribution of internal objects. Absorption, deflection, re-projection
[6] Manifest↔phantasy social levels and dynamics of social change

1.1.10   Conclusion

It is hoped that the ideas in this preliminary paper, including the three foundational models of Freud, Bion and Jaques, will provide fruitful work in terms of implementing computer-based psychoanalytic models of groups and social systems, including attempts to integrate these perspectives with complexity theory. These models, along with others, can be refined, developed, and tested to enable us to reach a more comprehensive understanding of collective phenomena and allow for the emergence of a new field of artificial group psychodynamics.

1.1.11   Appendix

Correspondences between Bion's Basic Assumption Theory and Klein's developmental positions, modified from L.J. Gould [10]

	Sources of Anxiety	Affects	Object Relations	Major Defences	Minor Defences	Sophisticated /Adaptive Uses
PS	Fear of persecution, fear of destruction of ideal object/self	Anxiety, dread, primitive terror	Part-object and split- object orientation e.g. good/bad breast	Splitting of impulses and objects into positive and negative aspects	Denial, idealization. Projective Identification	Ordering experience, healthy suspicion, forming ideals, ability to act.
BAFF	Fear of persecution by powerful enemies	Anxiety, fear, terror, panic	In/out group mentality. Group members undifferentiated.	Splitting off and projecting outward intra-group anxiety/ aggression	Idealization of leader, denial of aggression	Realistic action, sensitive to danger, loyalty, commitment
D	Recognize dependency, fear aggression may destroy caretaker/cause retaliation	Guilt, despair, depression, envy, greed	Whole object awareness accompanied by dependency on the object	Reparation, manic denial of aggressive impulses which are turned inward	Sublimation Displacement. Inhibition. Repression. Splitting	Impulse control, symbol formation, creative capacity, linking internal states and external behaviour
BAD	Dependency on leader, fear of retaliation or abandonment	Helplessness, emptiness, depression, childishness	Dependent/submissive/hierarchical relation with authority/leader. Leveling of peers	Denial/repression of aggressive impulses toward leader. Idealization of leader	Splitting (idealization of group 'believers' and hatred/scapegoating 'non-believers'	Appropriate submission to and learning from authority, gratitude, discriminating followership
Oedipus Complex	Fear of exclusion, fear of retaliation	Jealousy, exclusion, loneliness, deprivation	Dyadic/triangular relations. Rivalry/ competition with one parent for favor of other)	Identification with aggressor. Phantasy of combined parent (e.g. phallic mother)	Regression to earlier defences (eg. splitting: idealized/ denigrated parents)	Capacity for passion, mature sexuality, romantic love, reproductive desire
BAP	Recognition of separateness, fear of exclusion	Libidinal excitement, vicarious pleasure, hope	Mobilization/maintenance/ vicarious engagement with the pair. Competition to be favorite child	Idealization/ preservation of pair to sustain hope. Repression of rivalry with pair members	Identification with the pair. Denial of despair. Repression/ denial of own sexuality	Recognise pair as source of creativity/ renewal/ change. Realistic future orientation

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