

Physical Measurement of Episodes of Focused Group Energy

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Abstract — Episodes of Focused Group Energy (FGE) occur when two or more people are focused on some objective and become coherently attuned to that focus. Most people have experienced this phenomenon at one time or another when everybody was “on the same wavelength.” Anecdotal episodes of this phenomenon have been reported in business meetings, in sporting events, in concerts and in prayer and healing. Many people are quite sensitive to this phenomenon; and when people are informed about it, they become more sensitive to it.

Focused Group Energy episodes cannot be scheduled. However, they are more likely to occur in situations where intense group focus is required. We have conducted a series of experiments to measure FGE episodes physically (objective measurements) as well as having sensitive participants simultaneously recording the episodes (subjective measurements). The meetings were chosen because of previous reports of intense FGE activities by sensitive participants. A field deployable Princeton Engineering Anomalies Research (PEAR) Random Number Generator (FieldRNG) was used to monitor the space in which these meetings took place before, during, and after the episodes. The FieldRNG is used to detect if the random number sequence is entrained by the FGE episode to behave non-randomly.

We have conducted eleven such experiments to date with consistent, repeatable results. After FGE episodes have been reported and recorded by sensitive participants, the FieldRNG results were compared after the fact and consistently were greater than two and sometimes three standard deviations from the mean for the whole time period of the episode (some lasted for hours). Other time periods where no FGE occurs are also examined to determine if there are false positive excursions in the data. A true positive case is counted only if the FieldRNG results are over the two sigma level for the duration of the episode for both the objective measurement and simultaneous subjective reports.

Keywords: consciousness — entrainment — episode — focused group energy

1. Focused Group Energy

A. The Phenomenon of Focused Group Energy

Groups of people meeting or working together and focusing on some agenda, activities, or tasks at times experience and sense a feeling of group

attunement. This sense is described in many ways by different people such as “we are all on the same wavelength,” “the group resonated,” “the group became attuned to each other and the work became easier,” “we focused our combined energy and attention on the activity,” *etc.* This condition or phenomenon is recognized by many if not all participants in the group when it is present. Different people are conscious and aware of the phenomenon to different degrees when it occurs, and some are able to record its presence immediately after the experience. They presumably have a more developed sensing capability for being aware of the existence of this state.

At this stage of observation, one cannot define what is happening in any detail, but only describe it as an awareness of this focused group energy when it occurs. The use of a name such as “focused group energy” (FGE) may be misleading since it implies several properties to the experiential conditions that are speculative at best. However, given the need to describe the phenomenon, this name will be used.

B. Descriptions of the Phenomenon by Others

Others have reported this phenomenon in the literature:

Every so often we hear of a group of people who unite under extreme pressure to achieve seemingly miraculous results. In these moments human beings transcend their personal limitations and realize a collective synergy with results that far surpass expectations based on past performance. Anyone hearing a fine symphonic or jazz group hopes for one of those “special” concerts that uplift both the audience and the performers. Perhaps less frequent, but often more spectacular, are examples in sports, such as the 1980 U.S. Olympic Hockey Team, a group of talented amateurs who stunned the world by winning the gold medal against the vastly more talented and experienced, virtually professional Russian and Finnish teams. These occurrences, although unusual, are much more frequent in American business than is commonly suspected.

People recall these experiences vividly. There is a sense of sustained exhilaration, a moment of peacefulness in the midst of frantic activity, when time seems to flow in slow motion. Maximum effort is extended, and things come together effortlessly and in astonishingly effective ways that could never have been planned, yet at the same time with a sense of predestination. There is a feeling of unity with everything and everyone, from which deep personal relationships grow. Most experiencers yearn to relive the experience, and some find it so transforming that life becomes a search for duplicating it (Keifer & Senge, 1982).

Kiefer and Senge also couple intuition and alignment in their description:

Intuition and Alignment. Intuition is inherent in a highly aligned group. As individuals deepen their intuitive awareness of each other, activities fall into an easy, almost unconscious synchronization. Diverse projects come together in a natural and extraordinarily efficient way that simply couldn’t be planned rationally, as if each individual knew what was going on in the rest of the organization and executed his part, unconsciously maximizing the efficiency of the whole.

To explain this phenomenon we could hypothesize that people are connected at a level only intuition can comprehend that allows the seemingly magical ability to operate as a unified whole. Huxley (1945) calls this undercurrent of human consciousness the “perennial philosophy,” a common thread in all religions and philosophies. Each of us has probably experienced this transcendent state of alignment at one time or another, but probably more frequently in athletics or the performing arts, rather than in an organizational setting. Such experiences are nevertheless valid sources of insight into the phenomenon and the role of intuition (Kiefer & Senge, 1982, p. 11).

C. Some Research Questions

1. Is the FGE phenomenon real or imagined?
2. Does FGE represent a state of group activity separate from the individual activities of participants?
3. Can people *sense* the presence of FGE when it occurs? How do they describe it? Are there differing ability levels? Can people be trained to enhance their sensitivity toward FGE recognition?
4. Can repeatable, verifiable measurements of FGE be made under controlled conditions?
5. Is the FGE “source” a group or individual phenomenon?
6. Can studies based upon scientific principles, using empirical data, be carried out as a means of addressing these questions?

FGE occurrence is episodic and depends on the interaction of groups of people; it cannot be precisely scheduled. However, it occurs regularly enough in certain types of meetings such that the recording of episodes may be feasible on a reliable basis. The purpose of these meetings must be aimed at some focused activity other than the measurement of FGE, and the participants may or may not be informed of the attempted FGE measurements in any given experiment.

D. Spielraum Episodes

Several times a year, Turtle Studios¹ sponsors intensive Spielraum sessions. Spielraum is a method of combined play and creative work that allows Spielraum participants to rapidly recognize and experience the artistic and creative spirituality that dwells within a person, leading to an appreciation and creation of beauty. These sessions are held over a three day period, usually a Friday, Saturday and Sunday period. Six to twelve people and two coaches participate in a Spielraum intensive. A Spielraum workshop is similar to an intensive, but usually lasts for only one day with participants who have attended one or more Spielraum intensives.

At various times during a Spielraum intensive or workshop, the group as a

¹Turtle Studios is a not-for-profit educational and cultural arts organization with a spiritual base, and is located at 1203 King St. in Alexandria, Virginia.

whole as well as subgroups experience intense reactions. Many participants and the two coaches in particular report these emotional experiences as a “gathering and focusing of energy.” They recognize this state when it occurs and say that they feel it. Some participants and particularly the coaches are more conscious of this “state” than others.

In the Spielraum intensive setting, the first day begins with a group introduction lasting several hours and involves getting to know each other and understanding the individual objectives of the participants in a group session. The rest of day is spent as individuals, each doing their own work with coaching as needed. At the end of the day, the group gathers again to report on their efforts. The second day opens with a short group session, individual work for the rest of the day, but ends with a group recap session. The third day starts like the second day, but ends with a long group session to discuss individuals’ results and reactions to the Spielraum. All of the activities take place on site, except for lunch breaks. During lunch breaks, individuals often remain on site and discuss their work with each other or in small groups. Therefore, lunch breaks are usually part of the setting of the intensive.

The workshops are similar to the first day of an intensive; but, since the participants already have experienced intensives, they begin and end the day with group sessions. The last activity is a final session where results and reactions to the workshop are expressed.

Eight of the experiments were conducted at one site. This site became unavailable when a lease was lost and moved to another site where two of the experiments were conducted. A last experiment was conducted offsite in a different organizational setting.

FGE episodes in Spielraums were experienced during group sessions and in one-on-one meetings during lunch times. None have been reported during individual work conduct. At least one, if not two, participants (in these cases, coaches) who are particularly sensitive to recognizing FGE experiences were informed reporters of the experiences.

The Spielraum setting is only one activity that used the same space. Other types of meetings may have occurred sequentially and simultaneously. Data was generated for these events before and after the tested event.

2. Experimental Design

The experiment consists of simultaneously using a physical detector, sensitive members of the group, and a participating observer to report when FGE episodes occur during the Spielraums or other meetings. The physical detector is an electronic binary random number generator that continues to run before, during, and after the sessions. Written reports of events of the meeting, and whether FGE episodes occur and when, are recorded by the observer. The observations of the sensitive members of the group are also recorded. Members of the group keep time by either recording it themselves or by reference to an event that was recorded and timed by the observer. The random generator re-

sults are not examined until after the written reports are completed. This results in a single blind test. Since FGE episodes cannot be scheduled or cannot be recognized without an observer (at present), double blind testing cannot be designed.

A. Physical Detection Using a Field Random Event Generator

The Princeton Engineering Anomalies Research (PEAR) Laboratory has developed a field deployable Random Number Generator (FieldRNG). This device uses a white noise diode (shot noise) as a random event source whose detection circuitry is electronically adjusted to provide an unbiased series of binary samples such that on each sample of 200 events, on the average there will be 100 “zeros” and 100 “ones.” One set of 200 samples is taken approximately every second, and its statistics recorded on a personal computer for later analysis.

The PEAR Laboratory has conducted many experiments using the FieldRNG device to detect the conscious effort of individuals to affect the output of the device so that it will be unbalanced in one or the other direction, that is, more zeros or more ones than the average 100 expected. Essentially the device is used to detect the ability of individuals to mentally influence its output. Usually the intent of the individual is specified as to which direction the entrainment of the FieldRNG should take place. A great deal of statistical evidence has been generated by PEAR to show that such entrainment takes place. Sometimes, the result is the reverse of the individual’s intent. It has been proposed by PEAR that the FieldRNG is a “consciousness” detector.

A FieldRNG device, calibrated by the PEAR Laboratory, has been made available by the PEAR Laboratory for use in the experiments in detecting FGE. In this case, it is being used as an FGE detector independent of intent. The theory is that FGE produces a “group consciousness” that may entrain the FieldRNG detector as a by-product of its existence. If this can be demonstrated in a verifiable manner, then we will have a physical measuring device for determining the presence of FGE. Additionally, we will have demonstrated that the FGE sense can be measured in a physical device, that is, FGE is a human phenomenon that affects physical entities at some distance.

B. Session Data Acquisition

Two coaches, particularly able to sense when FGE episodes occur, participated along with the experimenter (the author) as the recording agents. The recordings were made on prepared forms, one set for each day as well as using a function key on the computer console (Fkey) to synchronize an event with the computer record of the FieldRNG output. The time, type of event, and Fkey # entries were all recorded prior to evaluation of any data. An evaluation was made each day after the session was over and all participants had left the premises.

The Fkeys (function keys on the computer keyboard) provide direct time stamp information to the FieldRNG program, and may be programmed for different purposes. In the early experiments the FKeys were used to record the beginning and end of scheduled events. Later some of the keys were reserved for FGE episodes, but were not used to date, since in all cases the FieldRNG was remotely located in another room on site and unaccessible. Therefore, the Fkeys could only be used when a session component was beginning or ending.

C. Scoring

Simultaneous observance of both subject and objective measurements of an episode was required for a positive report of an FGE episode, that is, 1) a report by a sensitive participant and/or the observer of FGE activity, and 2) a FieldRNG reading that was more than 2 standard deviations from the mean in either direction (more ones than zeros or the reverse) for a period of 60 seconds or more. If the events matched in this manner, they were considered as positive, otherwise the outcome of the experiment was considered negative.

1. FieldRNG Interpretation. Figure 1 shows the results of a negative FieldRNG response during a session. Slightly more than 8,000 trials were made over a two hour and twenty minute period, each representing the mean of 200 samples of the random number generator output. The parabola, beginning on the left, represents the two standard deviation limit, and extends to the right, increasing as the square root of the number of samples. Since there were no excursions outside the parabola, this was considered to be a negative FieldRNG response. In Table 1, statistical data is taken on each set of trials.

Although other investigators using FieldRNG devices have used other mea-

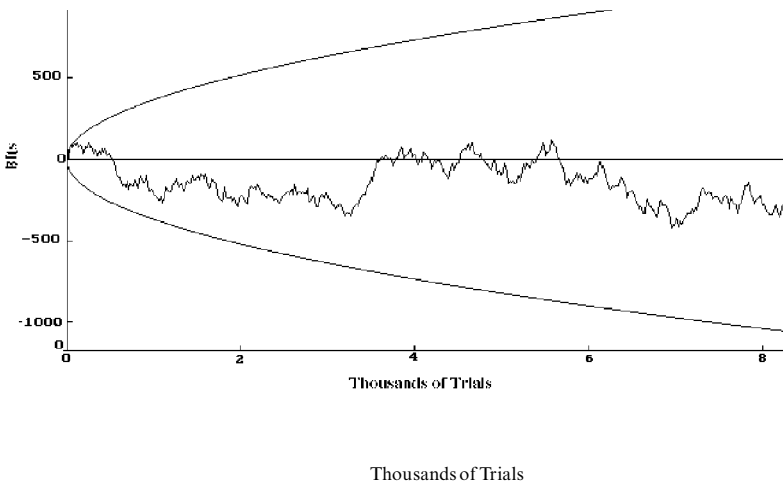


Fig. 1. Cumulative Deviation Curve of a FieldRNG Session of 8,000 Trials with an Absence of FGE Episodes.

TABLE 1
Example of a Recorded Record of a Session

Code	Item	Numerical Results*
N	Data Offset (Trial Sequence Numbers)	42297 to 50571
	Number of Samples	8274
M(T/E)	Test Mean/Experimental Mean	100/99.966
S(T/E)	Test Std Deviation./ Exp Std Deviation.	7.071/7.124
Z/P(Z)	Z-Score/Probability by Chance	-1.3102
T/P(T)	Student T Score/ Prob. by Chance	-1.2973
F/P(F)	F-Distribution Score/Prob. By Chance	1.015/0.166
Max/Min	Maximum and Minimum Means	74/130

*The numerical results are for the cumulative distribution in Figure 1. The codes in the left column are those used by the PEAR program.

asures such as the variance and *F*-tests in their experiments (Bierman, 1996; Blasband, 1995; Nelson, *et al.*, p. 111 and 140; 1996; Radin, *et al.*, 1996), the mean of the samples is used here, and a *Z*-score calculated for the apparent length of an episode. Since this experiment compares an objective measurement with a subjective observation, and since the effect on the FieldRNG is robust, the use of more complex scoring statistical models is not deemed to add much more useful information.

In a similar manner, Figure 2 shows a possible positive response to an FGE episode over more than 3,000 samples, representing an interval of about an hour. Technically there are two episodes since there is a peak at approximately 700 samples that lasts for more than 60 seconds. However, the pattern of the

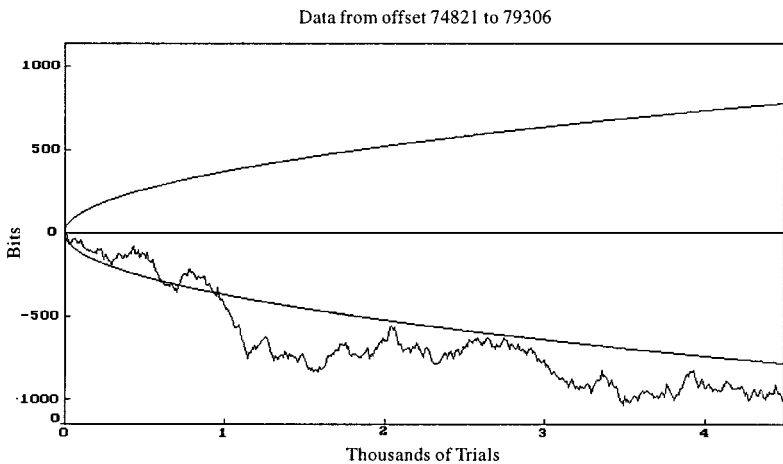


Fig. 2. Cumulative Deviation Curve of a Positive FieldRNG Response Over More Than 3,000 Trials.

response indicates that this peak is either a precursor or part of the same episode.

2. Combined Episode Scoring

The following scoring categories were established for each experiment:

True Positive	Concurrent reporting (matching) of an FGE episode by observers and positive results from the FieldRNG.
True Negative	No reports of FGE from observers and matching negative results from the FieldRNG.
False Positive	Report of an FGE episode by observers and a negative FieldRNG results during the same interval.
False Negative	No report of FGE episodes by observers, but positive results from the Field Reg during the same interval.

3. Experimental Results

Although many informal experiments have been carried out with robust results, only eleven formal experiments were conducted, based upon the quarterly schedule of Spielraum. For an experiment to be considered formal, 1) the session had to be planned in advance, 2) readings of the FieldRNG taken before, during, and after the session, 3) designated sensitive persons in place, 4) an observer making notes and keying the computer when appropriate. Informal experiments were exploratory and omitted one or more of these requirements. They mostly involved running the FieldRNG during a meeting by a participating observer who also looked at the FieldRNG results.

The results of the formal experiments are shown in Table 2. Based upon these results, the combined scoring is summarized as:

True Positive	8
True Negative	3
False Positive	0
False Negative	0
No. of Samples	11

4. Conclusions

A. Formal Conclusions

One set of experiments is inadequate to draw any final conclusions. However, there is enough evidence to indicate that FGE is simultaneously detected by both the coaches and the FieldRNG at least, under some conditions. Moreover,

TABLE 2
Results of Eleven Formal Experiments

Date	Type of Meeting	Location	Episode Length	Z-Score	No. Obs.	True Positive Event	True Negative Event (Un)Announced	Conditions
4/12/96	Spielraum	Fayette St.	7 hrs 24 min.	2.591	2	Intensive Group		Unann.
4/13/96	Spielraum	Fayette St.	None	0.85*	2	Activity	Individual Efforts	Unann.
4/14/96	Spielraum	Fayette St.	25 min.	2.61	1	Intensive Group		Ann.
6/3/96	Intensive	Fayette St.	None	0.24*	1	Activity	Individual Efforts	Ann.
6/3/96	Business Meeting	Fayette St.	3 hours	2.879	2	2 Person Mtg.		Ann.
6/3/96	Working Meeting	Fayette St.	45 min.	3.734	2	2 Person Working Session		Ann.
6/21/96	Intensive	Fayette St.	30 min.	2.75	2	2 People During Lunch		Ann.
6/23/96	Intensive	Fayette St.	None	0.96*	2		Little Joint Effort	Ann.
12/7/96	Intensive	King St	7 min.	2.145	1	Group Activity		Ann.
1/18/97	Intensive	King St.	30 min.	2.69	3	Group Activity		Ann.
4/22/97	Lecture & Meeting	Off-Site	1 min. 27 sec.	2.34	2	Anecdote During Meetings		Ann.

* For negative cases, the value shown is the cumulative z-score for the total period of the session.

there has been replication of these experiments by others associated with the Princeton Engineering Anomalies Research group (Nelson, 1997). At least three of the research questions in Section 1C can be answered affirmatively:

1. *Is the FGE phenomenon real or imagined?* Based upon the simultaneous reporting of FGE episodes by participants and the robust FieldRNG offsets, the conclusion is that the FGE phenomenon is real.

4. *Can repeatable, verifiable measurements of FGE be made under controlled conditions?* Although sessions where FGE episodes are likely to occur can be scheduled, the episodes themselves cannot be scheduled. Nevertheless, in these sessions episodes can occur often enough under some conditions so that repeatable measurement of their occurrence can be reliably made using controlled experimental protocols. Verification in single blind experiments by matching results from both participants and a physical measuring device has taken place in repeated experiments.

6. *Can studies based upon scientific principles using empirical data be carried out as a means of addressing these questions?* Based upon our limited but robust results, the FieldRNG is evidently a reliable detector of FGE episodes. Given the existence of both a detector and participants who are sensitive to the occurrence of FGE, studies adhering to scientific rigor can be carried out. The robust nature of the episodes and the FieldRNG offsets enhance this capability even though the episodes are presently not subject to prearranged scheduling.

The remaining three research questions cannot be formally answered at this time using the formal research protocols established for the experiments. However, during the period of learning and experimentation, a number

of experiments were carried out that did not meet the strict protocols for formal experimentation. Much has been learned from them about the nature of FGE that is more than speculative, but less than provable. Some of these informal results provide preliminary answers to the remaining questions.

B. Informal Results and Speculation

One set of experiments took place on June 3, 1996 from which significant information about the nature of FGE emerged. The FieldRNG was running for twenty-four hours before, during, and after the reported sessions; and was not analyzed until the next day. The morning session consisted of six individuals and a coach working on their own projects in a session called an “intensive” rather than a Spielraum. No group sessions were held, but all were aware of the operation of the FieldRNG and its purpose. There was no formal observer, but the coach who is sensitive to FGE made the notations during the day. No FGE episodes occurred, and the FieldRNG later corroborated this. After the intensive was over, the coach and one participant remained and held a business planning meeting. As soon as the meeting started, an FGE episode occurred which both participants recognized. They felt so elated that they decided to have a party to celebrate. Immediately after the party was set up, another episode took place. The party lasted for several hours, after which they resumed work for a short period where the episode (or another one) continued. The coach marked the beginning and end of each of these three periods using the Fkeys.

The profile of the afternoon was examined the next day, and is shown in Figure 3. The interval from the left ordinate to key E represents the business

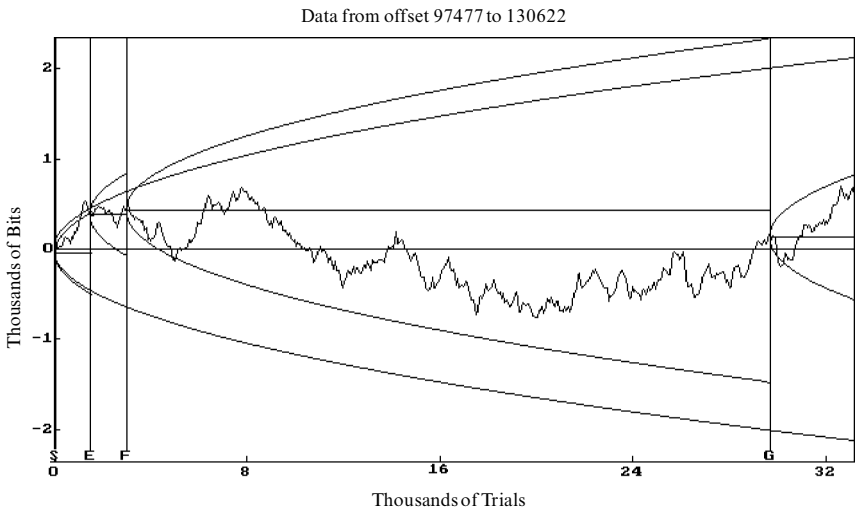


Fig. 3. Cumulative Deviation Curve of the FieldRNG Output for the Two Person Meeting When Both Participants Sensed a Strong FGE Episode.

meeting (after the intensive was over). The interval from F to G represents the setup followed by the celebration, and the interval from G to the right ordinate represents the close-out working meeting. For each of these Fkey entries a new parabola begins along with the continuance of the earlier parabolas. There appear to be two episodes, one from the left ordinate to E, and immediately after G. These represent episodes during the meetings. The period immediately after F, although barely reaching the two sigma parabola, represents the episodes during party setup.

This profile leads to some speculative answers to research question 3.

3. *Can people sense the presence of FGE when it occurs? How do they describe it? Are there differing ability levels? Can people be trained to enhance their sensitivity toward FGE recognition?* In the case above both participants sensed and were exhilarated by the FGE episode. They were consciously aware of the episode, and their description of it was remarkably close to the second paragraph of the Keifer and Senge quote in Section 1-B. Once exposed to it and aware of the presence of the FieldRNG and its purpose, the second participant easily recognized the FGE episode. Evidently there are different levels of ability to sense FGE, but both being made aware of the phenomenon and having experienced an FGE episode enhances their sensitivity to recognition of FGE episodes.

In all of the experiments with more than two participants, both individual and group work took place. All of the FGE episodes took place during the group activities. This leads to some speculation about research questions 2 and 5.

2. *Does FGE represent a state of group activity separate from the individual activities of participants?* The mounting evidence supports the conclusion that FGE is, indeed, a group activity. The effect seems to be the attunement of two or more people in an activity. While individuals may have some effect on a FieldRNG, the coherent focus of two or more people provides a robust offset effect on the FieldRNG diode.

5. *Is the FGE source a group or individual phenomenon?* The mounting evidence supports the source as being a group phenomenon. However, the design of an experimental protocol to test whether the effect might be one member of the group being enhanced by the presence of others, *i.e.*, an individual source gathering impetus from others, as opposed to a true group effect, is presently not available.

Increased experience as an observer indicates different patterns of FGE seem to emerge from groups of women, men, and mixed groups when they meet for the first time in the particular settings in which experiments have been conducted. Groups of women are apparently willing to work cooperatively from the beginning on some group activity leading to focus. Groups of men seemingly must shed their initial competitive posturing before they settle down to cooperating. Mixed groups seemingly must establish a comfort level

before cooperative focus can be established. Any generalizations at this time are purely speculative.

What is the nature of the “energy fields” that affect both the senses of the participants and the FieldRNG? At this time there is insufficient evidence from the set of experiments to draw any speculations. What is evident is that the FieldRNG may be located in the room where meetings are taking place or remotely located on site without affecting results. Some experiments were carried out on sites (King Street and Off-Site) while other activities were taking place in the same building. This did not seem to affect results in terms of false positives or false negatives.

C. Summing Up

In summary, the PEAR FieldRNG seems to be a reliable detector of the coherent mind focus of groups of people as opposed to individuals working alone. Using this detector, empirical evidence in the form of single blind experimental protocols provides direct evidence that episodes of Focused Group Energy occur, and are both sensed by people and are physically measurable. Moreover, the conscious awareness of the FGE phenomenon by people experiencing episodes is real, and represents an extra sense above the five conscious senses. The FGE phenomenon is robust, and its occurrence leads to improved performance and exhilaration in that performance.

D. Further Research

Further experiments are contemplated at the King Street site and others, and several improved test protocols are being considered. Additional types of experiments include:

1. Deployment of multiple FieldRNG detectors on site in different locations with different types of physical shields to provide better understanding of the performance of the FieldRNG as a detector.
2. The use of a rate detector on the FieldRNG software as a means to indicate a change in the slope of the cumulative deviation curve whereby real time feedback to participants may be employed. Such instantaneous feedback may either detract or enhance the onset and sustainment of FGE episodes.
3. Determination of the effect of non-participating observers on FGE episodes, and whether such observers can sense the existence of FGE episodes.
4. Determination of the conditions where participants can also be active observers and recorders of events and FGE episodes.
5. Development of means to enhance the onset of FGE episodes.
6. Conduct additional formal experiments in a variety of other settings and sites where FGE episodes are likely.

References

- Bierman, R. J. (1996). Exploring correlations between local emotional and global emotional events and the behavior of a random number generator. *Journal of Scientific Exploration*, 10, 3.
- Blasband, R. (1995). The ordering of random events by emotional expression. Paper presented at the Society for Scientific Exploration Meeting, June 15.
- Huxley, Aldous (1945). *The Perennial Philosophy*. New York: Harper and Row.
- Kiefer, Charles F. and Senge, Peter M. (1982). Metanoic organizations: experiments in organizational innovation. Chapter in *Visionary Leadership* by Innovation Associates Inc., Framingham, Massachusetts.
- Nelson, R. D. (1997). FieldRNG measurements in Egypt: resonant consciousness in sacred sites. Paper presented at the Society for Scientific Exploration Meeting, June 7.
- Nelson, R. D., Bradish, G. J., Dobyms, Y. H., Dunne, B. J., Jahn, R. G. (1996). FieldRNG anomalies in group situations. *Journal of Scientific Exploration*, 10, 1, 111.
- Radin, D. I., Rebman, J. M., Cross, M. P. (1996). Anomalous organization of random events by group consciousness: two exploratory experiments. *Journal of Scientific Exploration*, 10, 1, 143.