6/28/78

[redacted]

I know that I have been slow in commenting on the information you supplied to me, but quite frankly, it took me a long time to digest it all and even longer to check out those references I could get my hands on. Further, after reviewing the reports, I can not honestly say I have anything that important to add to what you apparently already know. There is, however, one thing unrelated to the report I would like to bring to your attention which may be of interest to someone, somewhere in your organization. It deals with a potential model of psi-magnification.

1. Document No. 76-13197

Overall, this document bears a strong resemblence to the proposal I submitted to you last year. Unfortunately, practically everyone else in the field has had the same thoughts at one time or another, in one form or another (Cazzamalli, early 1900's; Vasiliev, L.L., Experiments in Mental Suggestion. Church Crookham, Hampshire, England: Institute for the Study of Mental Images, 1963; Kogan, I.M. in Rejdak, A. (Ed) Telepatic a Jasnovidnost, Prague: Svoboda, 1970; for review see Chari, C.T.K. in Wolman, B.B. (Ed) Handbook of Parapsychology, New York: VanNostrand Reinhold Company, 1977).

1.1. Section 2

I have not run across any of the names (contributors) listed in Section 2, Page 1 in the literature. I am still interested in obtaining report No. 75-11096A, if available to me. I have no reason to doubt anything in this section, especially the choice of Kogan as the leader in the field. I found conclusions (5) and (7) particularly curious (p. 2-3, 2-4, respectively) as well as the inclusion of Document EW-76-011 with those you sent me. I sense that neither the authors of Document No. EW-76-011 nor you can determine the purpose for psychophysiological training on a large scale. There is no indication that it is being used just as screening device to detect and develop only those people who are "gifted". It appears that they believe the ability is inherent in almost everyone and can be developed to some reasonable (and usable ?) extent in those individuals willing to try.

1.2. Section 3

I found this section very vague. It seems as though it were written to fill a gap rather than to inform. I also feel that they have greatly underestimated Ryzl's attempts to combine sequential analysis, decision boundaries, probability theory and information theory. Even though I had read this section a number of times, I did not see any connection between Ryzl's work and my own binary elimination computer modeling (see Psi Magnification, below) until after I had thought out the model and made the calculations.

1.3. Section 4 - 6

No comment. Not my field.

1.4. Section 7

Elegant. However, I have this scenerio in my mind where Kogan presents a similar theoretical construct to his superiors who listen patiently and then say "That's very nice Dr. Kogan, now how do we use it to send messages which cannot be detected by satellite"? My point is that nowhere in this document do the authors address themselves to application of psi-phenomenon to information transfer. It seems to me that some speculation on this point is warranted independent of how it works.

1.5. Section 8

Again Ryzl's work is mentioned but nothing concrete is made of it.

1.6. Section 9

I do not agree. It would seem more likely that a military instillation would be used where large numbers of mentally healthy volunteers were available. If their research is to be reduced to practice in some sort of communication effort it is doubtful that mentally unstable personnel would be used. There is an overriding tone in this entire report that the Soviets are restricting themselves to highly theoretical and exploratory research without any effort to develop a practical, even if crude, communication system or network.

1.7. Section 10

Psychophysiology and Psychology p 10-2. I assume the initial report they are refering to is No. 75-11096A. Although I have not read this report, I can easily guess that the authors are refering to the widely known asymmetric functions of the parietal and/or temporal lobes of the human cortex. Considering the holistic nature of psi-phenomena and the conceptual nature of information processing performed by the non-dominant (usually right) cerebral hemisphere it is the only parsimonious explanation available to date.

I further assume that the authors realize that the studies proposed on p. 10-2 would be confounded (at least) and irrelevant (at worst) if the subjects had an intact corpus collosum. I would agree that it would be absolutely fascinating to do these very same studies in "split brain" subjects or right temporal lobe epileptics known to be sensitive to "gifted" agents.

2. Document No. EW-76-011

I must confess I fell asleep many times reading this document. It basically says the same thing as Ostrander and Schroeder (Psychic Research Behind the Iron Curtain, Prentice Hall, 1968) and J. G. Pratt (in Wolman, B.B. Ed. Handbook of Parapsychology, New York, Reinhold Company, 1977). That is, that the Soviets take parapsychology seriously, treat it objectively (as opposed to mystically) and do a lot of mass training. Like all other scientists in a poorly funded field, he suggests that the U.S. government pump large quantities of money into his specialty - biofeedback - so we can stay ahead to the Soviet Union.

SG1B

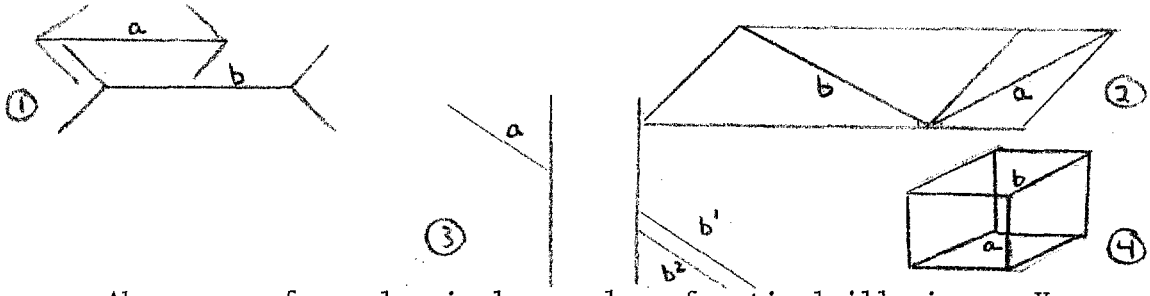
3. Document [redacted]

Paper by G. P. Krokhalev entitled "Photographing Visual Hallucinations" (Third International Congress on Psychotronic Research, Part II, Tokoyo, 1977).

This is a well written account of some Soviet studies in thoughography. It did get me to read Jule Eisenbuds fascinating book on Ted Serios (The World of Ted Serios. New York; Morrow, 1967). It is interesting to note that the subjects in Krokhalev's paper and Ted Serios were alcoholics. Further, there is nothing new in Krokhalev's article which Eisenbud had not already considered. Such phenomenon have been known for more than 100 years (earliest account: Mumler, W. H. Personal Experiences of William H. Mumler in Spirit Photography. Boston: Colby and Rich, 1875). This and other psychokinetic phenomena (i.e. poltergist activity) are perhaps the most demanding forms of psi-effects - demanding in the sense that they are real, leave lasting evidence of their existence, and obviously require large amounts of carefully focused energy.

4. Psi-Magnification

This section is a brief report on my own work as it relates to ESP. It is all theoretical. There is no biological data. It resulted from an interest of mine in optical illusions and sensory processing. Some of it is tough reading because of its abstract nature.



Above, are four classical examples of optical illusions. You know that in Figures 1 and 2 that lines "a" and "b" are equal in length; that "a" is continuous with "b^2" and not "b^1" in Figure 3; and that

corners "a" and "b" cannot be in two placed at once in Figure 4. However, no matter how hard or long you look at these figures, the illusions persist (i.e. b > a in Figures 1 and 2, etc.). It occurred to me, as I am sure it has occurred to others, that the brain does not use all the information available to it before making an irreversible decision as to what it "thinks" it senses within the visual field. I decided to test a part of this hypothesis with a mathematical model which incorporated a simple decision making process. It went as follows: according to information theory the number of information bits (I) necessary to absolutely identify a character with population of fixed size (N) is

$$I = \log_2 N$$

For simplicity I chose a population of N = 16, thus requiring $\log_2 16 = 4$ information bits to positively identify any one character (mark). I also chose to have 16 independant estimates randomly identify the mark. The mark was the number seven (7) in the following array in the entire study:

	I_2 ↓		I^1 ↓	
	1	5	9	13
	2	6	10	14
I^3 →	3	7*	11	15
I^4 →	4	8	12	16

If any one estimate was in the plurality, it became the choice for the entire set. In the case of a tie, information bits were used until a plurality was established. The sequence was always the same: I^1 distinguished between 1 - 8 and 9 - 12, I^2 between 1 - 4 and 5 - 8, I^3 between 5 - 6 and 7 - 8 and I^4 between 7 and 8. Of course, if the information bits were called for, the average population size decreased proportionally. This was calculated separately. Two examples are shown below:

Example 1

	5	3	13	10	11	6	3	3	8	9	3	15	7	1	3	10
Ranked	1	(3	3	3	3)	5	6	7	8	9	(10	10)	11	13	15	

Mark = 7

Plurality estimate = 3

Information bits used = none, chance = 1/16

Estimate correct? = no

Example 2

	5	8	15	14	5	12	14	7	12	7	9	9	2	7	13	5	
Ranked	2	(5	5	5)	(7	7	7)	8	(9	9)	12	12	13	(14	14)	15	

Mark = 7

Plurality estimate = cannot make because of tie, call for I^1, thus eliminating 9 - 16

remaining	2	(5	5	5)	(7	7	7)	8									

Plurality estimate = cannot make because of tie, call for I^2, thus eliminating 1 - 4

remaining	(5	5	5)	(7	7	7)	8										

Plurality estimate = cannot make because of tie, call for I^3, thus eliminating 5 and 6

remaining	(7	7	7)	8													

Plurality estimate = 7

Information bits used = 3, chance = 1/2

Estimate correct? = yes

I used this procedure on 500 sets of 16 random numbers generated by computer. The results were interesting:

Chance with no information bits = 1/16 = 0.0625

Average chance in 500 set s where information bits were introduced as needed = 1/11.54 = 0.0867

Incidence of 7's (hits) = 1/5.88 = 0.170

There is probably some very sophisticated mathematical explanation for this phenomenon but it struck me as a fascinating observation. What it means is that a unilateral decision making process can increase the incidence of hits above chance. At this point I bisected my interest into two areas. The first is a continuation relevent to my interests in illusionary phenomena which I will not go into further here. The second was a potential method for communication which could be reduced to practice with partially "gifted" subjects.

4.1. Percipient Limitations

In order to determine the range limitations of potential percipients I read J. B. Rhines original text on extrasensory perception. His best subjects performed at twenty percent above chance, i.e. when chance was 1/5, they would operate at 2/5 rather reliably. It is curious to note that nowhere in the literature has anyone attempted to determine whether the operating level of a percipient is related to the size of the forced choice population. So we really do not know whether Rhines best subjects were performing at exactly twenty percent or rather at twice chance. This is an important point. For instance if the population was N = 10

Case I: operating at 20% above change

0.10 (chance) + 0.20 (ψ) = 0.30 (operating level)

Case II: operating at 2 x chance

0.10 (chance) + 0.10 (ψ) = 0.20 (operating level)

4.2. Computer Modeling

For the sake of argument I assumed that a reasonable "alphabet" could be made of 16 characters. This alphabet then became the forced choice population or "N" value. I then assumed that 16 percipients would be available on the "receiving" end of the communication link and an indeterminant number of agents would be available on the "sending" end of the communications link. The last assumption would be that separate computer-run data processing devices would be in contact with each other by conventional radio on the receiving and sending end of the communications link. When an information bit was to be transferred the computers would signal both agents and percipients to "send" and "receive" respectively. The 16 percipients would individually indicate their choice of what they think the particular character (out of 16 characters) was. Once all 16 percipients indicated their choice the percipients' computer (unilaterally) applied the decision boundaries described in 4. above. In the case of ties, the percipient computer would ask the agent computer to apply I^1, I^2...etc. as necessary until a plurality occurred on the percipients end. Going back to the example in 4. where only chance was involved (and no ESP), the chance of an external source (monitoring satellite) guessing the correct character was 1/11.54 or 0.087 (8.7%) whereas the accuracy of information received by the percipient computer was 1/5.88 or 0.170 (17%). This, of course, is not accurate enought to make such a system practical. Now let us consider the situation where the percipient group does have ESP ability. I modeled this out by computer by expanding N to 17, then 18, then 19, then 20 but held the sets (percipients) to 16. When analyzing the random number sets of 16, I assigned those numbers above 16 (e.g. 17 and/or 18 and/or 19 and/or 20) as correct estimates arrived at by ESP. Of course, the correct guess by chance (always character number 7) was also included. The results were startling as shown in Figure 1.

4.3. Discussion

I have little knowledge of what the practical limits are for information transfer but I assume that they fall within the range described in Figure 1. The Soviets may have already stumbled upon a similar principle and this may be the reason why they are training so many gifted individuals. It is quite possible that other combinations of character population, decision boundaries, etc. would have even more appealing characteristics. The only flaw in the system that I can see at this point is the possibility of response bias, i.e. a given individual will be bias towards some characters more than others thus upsetting the random nature of chance guessing.

discuss it in more detail with members of your organization.