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Psychokinetic Action of Young Chicks on the Path of An Illuminated Source[1]

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Abstract — We tested the possible psychokinetic influence of 80 groups of 15 chicks on a randomly moving robot carrying a lighted candle in an otherwise darkened room. In 71% of the cases, the robot spent excessive time in the vicinity of the chicks. In the absence of the chicks, the robot followed random trajectories. The overall results were statistically significant at $p < 0.01$.

Introduction

For the past 25 years, researchers in parapsychology have invented numerous devices driven by random sources to test the hypothesis that consciousness could alter their performance. For example, H. Schmidt (1970, 1971, 1973), built an apparatus which randomly selected the numbers 0, 1, 2 and 3 in an equal distribution, and demonstrated that one or the other numbers would appear more frequently in the presence of a human subject who tried consciously to will this variation to occur. The results were significantly different from the random expectation at probability of 1110,000. Since then, many other experimenters have confirmed a psychic influence of humans on such "Random Generators" (Radin & Nelson, 1989; Jahn et al., 1987).

In an initial experiment (Peoc'h, 1986), we established that young chicks aged from 1 to 7 days could attract towards them a robot controlled by a random generator, and we subsequently developed this research further with the use of a conceptually new machine, the Tychoscope 1, invented by P. Janin (1977, 1988). (The name Tychoscope derives from the Greek "tukhe", which means chance, and "skopein", which means to examine.) This was a small, self-propelled robot driven by an internal random generator to move about on a level surface in successive segments of random length and orientation. A plotter attached to the robot traced a record of the movements, allowing graphic recording of the path of the vehicle. The use of baby chicks was motivated not only by the fact that they are easily obtained and maintained, but also by the fact that birds are readily imprinted (Lorentz, 1978). After hatching from the egg, many species of baby birds adopt the first close moving object as their mother. We conditioned our chicks to adopt the Tychoscope as their mother, by placing them for one hour alone in the presence of the moving robot, every day for six days after their birth.

After this conditioning, we put the chicks in a transparent cage and left them in this confinement. From their cage, they could see the robot moving about on the tloor. The objective of this experiment was to see whether the robot would continue to move at random, or if it would migrate towards the chicks. It was found that the Tychoscope spent two and a half times longer on the half of the surface closer to the chicks, compared to its motion when the cage was empty ($\chi^2 > 11$, $p < 0.001$). Using chicks that had not been conditioned to adopt the robot as their mother, the robot moved in its normal random motion (Peoc'h, 1986). It seemed therefore, that the effect on the Tychoscope depended more on the conditioning of the baby birds than on some common biological mechanism.

Based on these initial results, we undertook a new cycle of experiments, in collaboration with the Foundation Odier de Psycho-physique, using a new Tychoscope built by R. Tanguy (1979,1987) and R. Peoc'h. This second generation robot (Tychoscope 2, Figure 1) was the subject of a doctoral thesis (Tanguy, 1987) and took several years to develop. It is quite a bit larger than Janin's Tychoscope 1 and is remote-controlled by radio waves emitted from a computer that also records all of its movements, making control and calculation much easier than before (Peoc'h, 1994).

The goal of this study was to assess the effect of a group of 15 young chicks on the path of Tychoscope 2 when it was carrying a lighted candle. Specifically, we wanted to know whether chicks raised in darkness would be capable of pulling the light-bearing Tychoscope towards them to have more luminosity, since they do not like to be in darkness during the day. In contrast to the earlier study. these chicks were not exposed to the Tychoscope before the actual experiment. The paper summarizes this most recent study.

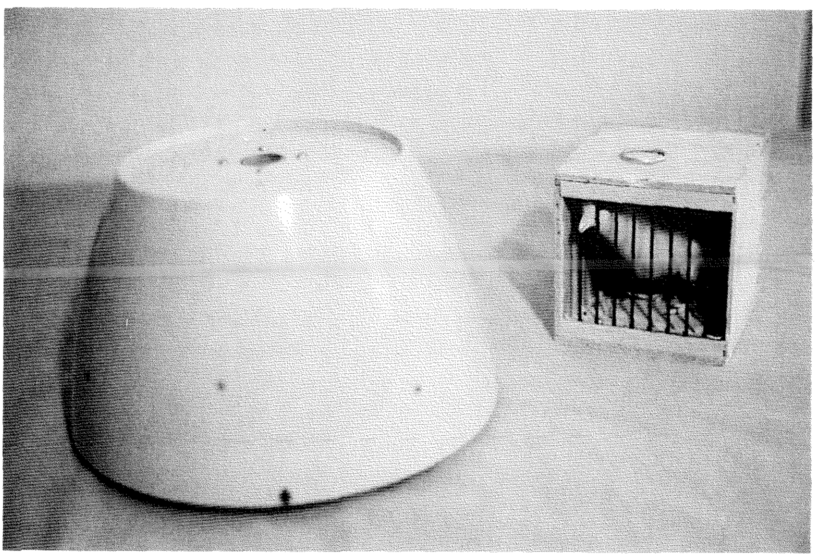

Fig. 1. The Tychoscope invented by R. Tanguy (with chicks in the cage).

Experimental Equipment

The Chicks

Male and female chicks of the Warren ISSA variety, born by a brooding system at night, are isolated by groups of 15 in 20 x 21 x 13 cm cartons punched with numerous air holes. The cartons are kept at 31° C and exposed to the variations of natural luminosity. Food (water and flour) is distributed automatically, and the chicks never see the experimenter. The experiments begin after seven days of life, in a room free of noise.

The Robot

Tychoscope II is approximately cylindrical in shape, 23 cm diameter, 15 cm height. Its color is beige and it weighs about 2 kg. It is allowed to move about on a flat surface 1.6 m long and 1 m wide. The device starts from the center of the surface and runs for about 20 minutes. Its trajectory is recorded and memorized by the computer, on line, for subsequent detailed analysis.

The Tychoscope rests on its base at three points: two wheels and a fixed pivot leg. The wheels are set parallel to one another and always turn at the same speed, but each of them is driven by a separate motor, and may revolve in either direction. Thus, the robot may move straight forward, straight backward, or rotate either clockwise or counter-clockwise. The actual movement of the device is displayed as a jagged line trajectory on the computer screen.

As soon as the robot is switched on, it makes a clockwise or anti-clockwise rotation of randomly assigned amplitude between 0" and 359°. After this rotation, it moves about in straight line segments, either forward or backward between 0 and 20 cm, interspersed with random rotations. The robot's trajectory is circumscribed by a rectangular perimeter programmed by the computer, up to 1.0 m x 1.6 m. When the exterior edge of the Tychoscope reaches the edge of the perimeter, it stops immediately and will only proceed when the random generator chooses a direction within the programmed perimeter. Although this constraint imposes some departure from strict randomicity, it is common to all calibration runs as well as to the active experiments. The radio control of the robot has a range of some 15-20 meters. Power is provided by a rechargeable battery within the interior of the robot with a lifetime of 55 minutes. The motors drive the wheels in stepped increments of 1/3 mm. that can be compensated for wear of wheels and axles.

The random generator that instructs the robot was invented by M. P. Janin (1986) and is based upon microelectronic noise associated with thermal electron motion at a conducting interface. It is placed in a small box (10 x 7 x 3 cm) and linked with the computer by electric cable. The small dimensions of this machine make it possible to place it inside a lead box, a Faraday box, a container full of water, etc., which can shield it against various types of electromagnetic interference.

For each translation or rotation made by the robot, the computer records several parameters. A file in Windows Excel 3 records each movement forward or backward, and the clockwise and anti-clockwise rotations. The number of motorized steps is computed and recorded for both linear and rotary movements. The position of the device relative to the departure point is recorded as an abscissa and ordinate (x,y). The angles of the rotation are recorded in degrees. The duration of each experiment (20 minutes) is programmed to the second. All of the numerical data are listed in tabular columns, allowing the computer to calculate different statistics, e.g., the average of the x,y positions, the average number of steps in linear and rotary movements, the variance of the data, etc.

Protocol

The experiment takes place in a darkened room, wherein the candle on top of the Tychoscope is the only source of light. The closer the Tychoscope remains to the chicks, the more light they receive. During their normal waking cycle, the chicks do not like the dark and they will cry when the light departs. They stop crying when the light returns.

Unlike our previous experiment, the chicks stay in their cage for 7 days after birth without seeing the Tychoscope. Then each group of chicks undergoes the experiment once a day for three consecutive days. Having not seen the robot at all for a week, they have not adopted it as a kind of mother, but are more attracted by their fellow creatures.

The chicks' glass cage, 30 cm x 18 cm, is always placed as shown in Figure 1 on the right of the rectangular surface. It is raised from the floor in such a way that the chicks are at the same height as the candle. The candle has a diameter of 3 cm and a minimum height of 10 cm.

At the end of each experiment the computer calculates the average position of the robot over its 20 minutes of movement. It is the average of the x coordinates that interests us and will be analyzed. If the average is positive it indicates that the robot spent more time in the half of its space that is nearest the chicks than in the other half (Figure 4).

Results

We did 80 active experiments with the chicks in groups of 15, and 100 control experiments without any chicks or any observer. The average values of x for each active experiment and for the control experiments are displayed as histograms in Figures 2 and 3. In 57 out of 80 of the chick experiments, (71%) the robot spent more time in the chick half of its range, i.e the average value of x in these 57 experiments is positive. On the other hand, in 50 of 100 controls, the average value of x is positive and in 50 negative. The usual χ^2 test indicates that the results of the chick experiments are significantly different from controls, at $\chi^2 = 8.32$ $(df = 1)$, $p < 0.01$. The average value of x over all of the chick

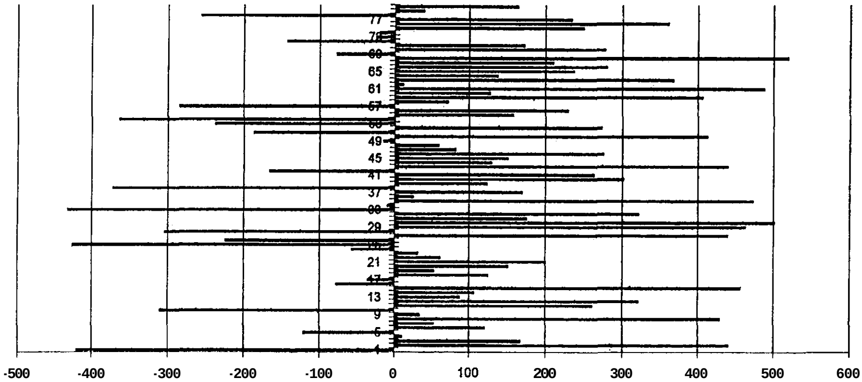

Fig. 2. The average value of x on 15 chicks.

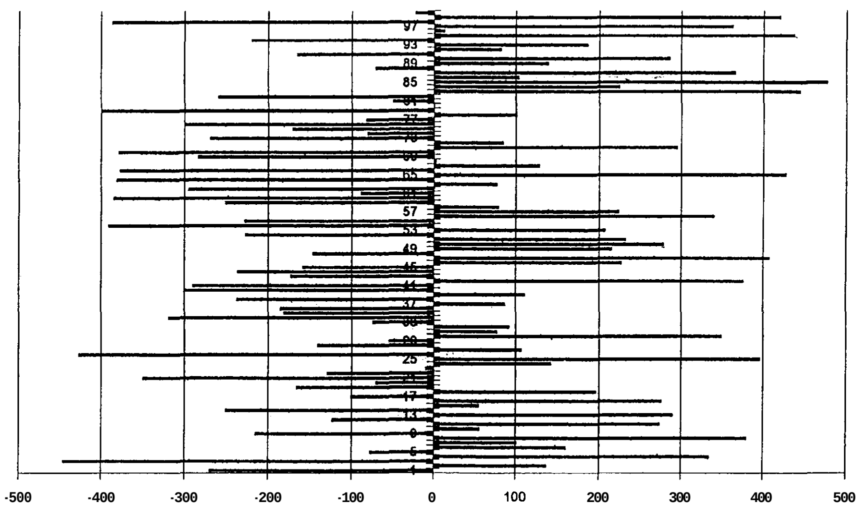

Fig. 3. The average value of x on control trials.

experiments is 105.1, compared to –0.10 for the controls, a difference that is significant at $p < 0.01$.

We also noticed that in the experiments with the chicks, there was a larger number of cases in which the robot had an average position greater than +400 or less than -400), compared to the controls (24% vs. 8%; $\chi^2 = 8.64$, $p = <0.01$). Figure 4 shows a particularly striking example of chick experiment No. 35 in which it can be clearly seen that the Tychoscope remained near the chicks (average $x = +474$).

Remarks

It should be noted that the chicks have no awareness of the random generator itself. This was placed near the computer in another room at a distance of 5 meters from the chicks and the Tychoscope. However, the size of the candle as

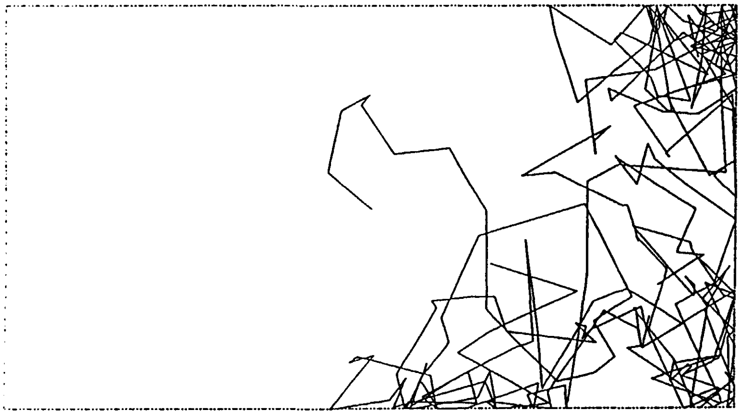

Fig. 4. Experiment number 35 on 15 chicks in which the Tychoscope went towards the cage containing the chicks.

well as the length of its wick do seem important in this experiment. If the light given out by the candle is not sufficient, the chicks tend to fall asleep in the dark. In that case, they seem to push away the Tychoscope, perhaps because the light hinders them from sleeping. Furthermore, the time of day during which the experiment takes place is also important. If the chicks fall asleep during the experiment the results are very different. It is thus prohibited to do the experiments at the end of the day. The experiments must take place in the morning after the chicks wake up, or at the beginning of the afternoon.

As another form of control, we performed the chick experiment without a candle on the robot, with the room filled with daylight. In this case no significant deviation of the robot was observed, compared to the random expectation ($p > 0.8$). Hence, it appears not to be the physical presence of the chicks that causes the effect. Nor is it the presence of the lit candle that causes the disturbances of the robot, since in the control experiments the lit candle was in place. It is thus appears that both chicks and candle are required.

Acknowledgement

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[1]This paper has been substantially edited from its submitted form by Robert G. Jahn.