ESTUDOS de DANÇA

3

DEZEMBRO

1994

faculdade de motricidade humana
UNIVERSIDADE TÉCNICA DE LISBOA

DANCE AND TEMPORALITY: POSSIBILITIES OF MEANING

Helena Katz*

The second law of thermodynamics applies to practically everything. If you have bodies large enough to exert measurable gravitational forces, you can apply Newton's law of gravitation. If you have microscopic particles, you work with quantum mechanics. But as the second law governs the transmission and conversion of energy, it can be applied to any kind of matter, as all matter has energy in one form or another.

Naturally there are no completely isolated systems in nature. Isolated systems do not interact with their environment and to some extent everything interacts with its surroundings, even when interchanges are so small that we treat them as neglectable.

Energy alone does not make things happen. Energy manifests itself in different levels and this makes the point. We can name this difference in energy levels as disequilibrium. Disequilibrium is characteristic of every natural process and tends to disappear. If we don't use batteries, its electrical energy leaks away. When there is no more electrical energy, batteries do not act as batteries anymore.

When energy is converted from one form to another, some of it is dissipated as heat. This is not a symetrical process in time as there is a difference between heat dissipation and heat absorption. When heat dissipation occurs, the amount of useful energy available decreases. Entropy (understood as absence of disequilibrium) increases.

The second law of thermodynamics points that the entropy of an isolated system tends to increase. Living organisms - which are not isolated systems - store up disequilibrium as they grow. Based on this fact one could think the second law is not applicable in this case. But living organisms belong to a system along with their surroundings. When

* Coordenadora do Laboratório de Dança da PUC/São Paulo

the entropy of a system is decreasing, this probably indicates that this system is not a whole, but part of some other larger system.

If this is so, increase or decrease of entropy shows us that the universe we are in looks differentely if we think in its future or in its past. Future and past show different directions, mostly not-interchangeably. There will be more entropy in the future than in the past. Entropy, however, is a statistical statement that refers to average behaviour. And statistics procedures include fluctuations. And what fluctuations tell us is that improbable events can happen even though they do not happen.

Dance is an event that occurs in a living body. And it happens in a very specific and characteristic way: dance exists when and only when it is being done. This peculiar way of being implies simultaneity. There is no tick-tack linearity in movement production. Movement is a neurological cluster that the body turns into presentness.

Time is a dimension, in physics. Mathematically, a dimension is only a coordinate. The dimension of time has no priviledged instants so what we call "now" has a different meaning in physics. Some philosophers and scientis have put that the "now" is only a subjective phenomenon. But if the "now" exists in my consciousness, it probably does operate in others' consciousness also, what transforms this well known subjectivity into a sort of "collective subjectivity".

Mathematicians and physicits tell us that we cannot define an event in an unambiguous way. Different observers compute different times, specially when they are talking about distant events, and this should not mean that one set of observers is right and all other sets are wrong. We must not choose between them. They can be equally valid.

Albert Einsteins' special theory of relativity puts that different states of motion produce different measurements. But this does not engender entirely relativistic evaluation of time. In fact, we are really able to agree about what happens in the present when we are present to that moment, sharing the duration of its occurence. All we can detect is the movement of two bodies when relating one to the

other, as Newton had already teached us. There are no ways of detecting absolute movement. The "now" exists only as a vividly "then".

According to Einstein's assumptions of the relativity of movement and the constancy of the velocity of light, the absolute simultaneity of events separated in space is impossible. This probably helps us explain why there is so much disagreement about dance - the art where being is doing. Dance happens as simultaneity and this circumstance provides a difficulty in our desire in stating exactly what ***is*** happenning. We can only refer to it as what ***was*** happenning. Simultaneity is not posssible with an observer in a different state of motion and the dancer dancing.

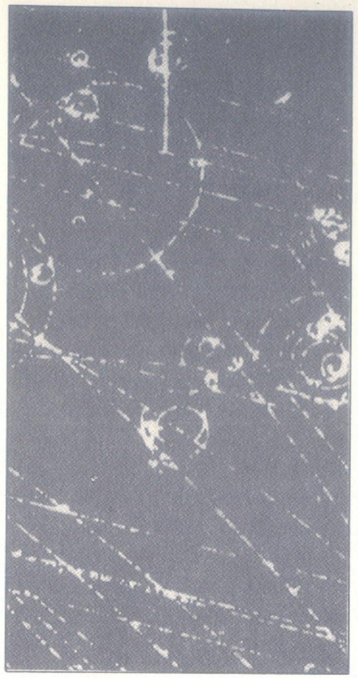
We are not able to say what dance temporally "really is" as it depends upon the state of motion of observer and doer (special relativity) and upon the differences in the acceleration rates between observers and doers (general relativity). Thus each of them has his own description of dance - even if they are two different moments of the same person. And if they do not coincide, how can we talk clearly about such type of occurence?

Different observers and doers compute different dances. Does this mean that dance is not describable?

Gravity makes things accelerate when falling toward the ground. As nearer as faster. Gravitational masses affect geometry of time and geometry of space.

Dance cannot be understood as a process that takes place in an ideal world. Bodies that dance are bodies of this pervasive world we all inhabbit and obey its laws. But dance has another very specific characteristic: although seeming to be all externality, it happens also on many other levels, including the subatomic. That is the primordial reason we must engage in developing a theory that combines quantum mechanics with general relativity to describe events like dance. A system of that high rate of temporality depends on instruments of analysis the more closely related to their object of representation the best.

There is a virtual agreement that this universe we live in began in a Big Bang something like 15



billion years ago. Originally, the universe has been in a highly compressed and very hot state, that began a rapid expansion.

When astronomers examine events, they make observations of phenomena that took place in the past. What they see is never at the moment of observation. In nature, there is always a delay between emission and reception of the visible light. Light travels through space and movement travels through a chain of semiotic translations before it appears as visuality, as externality and then travels through light.

Dance is a transit between quantics and relativity. Because dance is only superficially pure visuality. There is in dance something we can metaphorically name as its "Planck time" (the Planck time is the point beyond wich we cannot see). It refers to that thing we cannot see when dance is made but that it is exactly what makes movement be dance movement.

Endless semiosis and occurences that happen only once: wherever could nature create such combination if it did not produce dance?

Bibliographic References

Flanagan, Owen (1992). *Consciousness Reconsidered.* Cambridge: The MIT Press. A Bradford Book.

Fraser, J.T. (1988). *Time, the Familiar Stranger.* Washington: Tempus Book of Microsoft Press.

Maturana, Humberto R. e Varela, Francisco J. (1987). *The Tree of Knowledge.* Boston: Shambala Publications, Inc.

Varela, Franciso J., Thompson, Evan e Rosch, Eleanor (1993). *The Embodied Mind.* Cambridge: The MIT Press.

Winfree, Arthur T. (1987). *When Time Breaks Down.* Princeton: Princeton University Press.

I still make dances. I don't call myself a choreograph because that's a big, wonderful word that can cover u a lot of sins. I work. That's what I call what I do whe I make dances.

Martha Graham, 1989.