

To: MRI - Staff, Friends & Guests

From: Eddie Oshins, Quantum Psychology Project, MRI

GUNG HAY FAT CHOY!

Lunchtime talk — Celebrating Chinese New Year and Appreciating John Weakland

Interacting with John Weakland: From Marlboros to Monkeys!

Noon - Tuesday, February 15, 1994 at the MRI

Eddie Oshins will recount a story about Marlboros and some of his friendships with John Weakland and other members of the MRI over the past dozen and a half years. Specifically, Eddie will describe — and demonstrate using mathematical, i.e. counterintuitive, illustrations, involving surrogate packs of Marlboros and a belt, how he adapted certain mathematical concepts to data, involving mental rotations in humans (R. N. Shepard¹) and collective, neurophysiological interpretations of conditioned behavior of monkeys (A. P. Georgopoulos²), along with notions from paradoxes, second order change, and kung-fu, into a possible, classical neurophysiological hypothesis.³(Nothing yet that is quantum here!).

Eddie will describe his idea how to test his hypothesis. In recognition of the Chinese New Year, Eddie will describe how he molded certain stories from ancient Chinese, Taoist mythos into an empirically validatable model.

¹Shepard, R. N. & S. Chipman. (1970). "Second-order isomorphism of internal representations: shapes of states." *Cognitive Psychology*, 1: 1-17. Shepard, R. N. & J. Metzler. 1971 (February 19). "Mental rotation of three-dimensional objects." *Science*, 171(3972): 701-703. Shepard, R. N. (1978). The mental image, *American Psychologist*, 33: 125-137. Shepard, R. N. (1979). "Psychophysical complementarity." In M. Kubovy and J. R. Pomerantz (eds.), *Perceptual Organization*, Hillsdale, N. J.: Lawrence Erlbaum Associates. Shepard, R.N. (1984). "Ecological constraints on internal representations: resonant kinematics of perceiving, imagining, thinking, and dreaming." Third James J. Gibson Memorial Lecture, Cornell University, October 21, 1983. In *Psychological Review*, 91(4): 417-447.

²Georgopoulos, A. P., A.B. Schwartz and R. E. Kettner. (1986, Sept. 26). "Neuronal population coding of movement direction." *Science* 233: 1416-1419. Georgopoulos, A. P., et. al. (1989, Jan. 13). "Mental rotation of the neuronal population vector." *Science* 243: 234-236.

³Oshins, E. (1993) "A Test for Classical Psychospinors." In Abdullah, F. (Ed.) *Conservation and Invariance*. Cambridge, England: Alternative Natural Philosophy Association, c/o Dr. F. Abdullah, City University, Northampton Square, London EC1V 0HB, England. Oshins, E. (1986a, Mar. 21 & 1987e, Jan. 9) "The physics of Tao: representations of nature from Fu Hsi's trigrams to quantum psychology." Presentations to CG Jung Institute of San Francisco. Oshins, E., Kauffman, L., & Chung, K. (1989, Jan. 28). "Orienting and entangling oneself." Presentation to the Fifth Annual ANPA West Meeting: *Divertissements in Natural Philosophy*, Stanford University. Kauffman, L. H. (1991). *Knots and physics, Series on Knots and Everything — Vol. 1*, Teaneck, NJ: World Scientific.

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Background for February 15, 1994 talk by Eddie Oshins at the MRI

Eddie Oshins is a research associate with the MRI and the principal investigator for the quantum psychology project. In addition, Eddie is a visiting scholar with the Physics Department at Stanford University and an instructor with the San Francisco Wing Chun Student Association. Recently, Eddie was also a wing chun kung fu judge for the chi sau (sticky hands) competition at the 9th Chinese-American Athletic Tournament of the Bay Area, held at San Jose State University in August 1993. One of his areas of interest is in how the brain represents certain forms of “self-referential motion” (i.e. how part of the body moves with respect to the rest of the body) which can be found in certain meditative and martial arts.

In the late 1970's Eddie proposed a formal generalization of Professor RN Shepard's pioneering work demonstrating that individuals perform “mental rotations” of internal imagery in comparing differentially oriented asymmetric objects. In 1986, Professor AP Georgopoulos and his colleagues demonstrated that a related phenomenon takes place in monkeys. They found a collective activity pattern in the motor cortex of a trained monkey, termed a “population vector,” which rotated when the monkey intended to move a lever in a rotated direction, prior to movement. Eddie has proposed a variation of Georgopoulos' experiment on monkeys which would be able to accept or reject his hypothesis. Eddie's “population turn” hypothesis involves a substantial mathematical generalization of the concept of rotation and vectors, originally proposed by WR Hamilton in the early 19th century, which he believes to have significant psychological import. If the effect predicted by Eddie is found, it could open a new and important door to understanding how the brain codes space and movement, and even more general aspects of experience.

Eddie's paper “A Test for Classical Psychospinors” was presented at Cambridge University in September, 1982 at the 14th Annual Meeting of the Alternative Natural Philosophy Association at Cambridge University and published in their proceedings: *Conservation and Invariance, 1993*. (Ed.) Faruq Abdullah. (Judy, Marguerite, and Eddie have copies if anyone is interested in obtaining one.) On February 15, 1994, Eddie will be making a noontime presentation on this work at the MRI. In celebration of Chinese New Year, Eddie will tell a tale about cigarettes, the MRI, and the Physics of Tao, and how, in some sense, this lead to his recent ideas for a test for his hypothesis. Eddie has made similar presentations in the past at Stanford and at the CG Jung Institute of San Francisco, among other places.