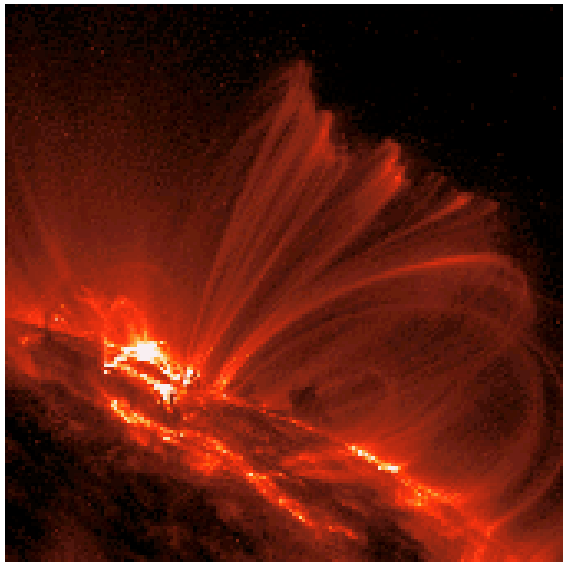
From Objects to Relationships

Timothy E. Eastman



Information for Dr. Eastman: Plasmas International, Silver Spring, Maryland
Email: plasmas@starpower.net Web Site: http://www.plasmas.org

Photo: Coronal loops imaged by NASA's Transition Region and Coronal Explorer (NASA and the Lockheed Martin Solar and Astrophysics Labs, http://vestige.lmsal.com/TRACE/)

Presentation to the Works of Love Conference, Villanova University, June 2, 2003

Two basic characteristics of human experience

1 (via cognition) the world of perceptual *objects*

2 (via feeling and love) whereby we experience both physical and human
"*relationship* as fundamental"

classical science perceptual objects as primary
- the ‘objective’ world

treats complex expressions of relatedness
as ‘subjective’ subject-object split

Working from only a worldview of perceptual objects encourages the quick dismissal of such relationship-centric notions as altruism.

contemporary science centrality of physical relationships; physical fields & ecological systems

More inclusive “both-and” understandings
(particles *and* waves, continuity *and* quantization …)
undercut earlier arguments that set up simple objects, or one pole of these dualities, as primary and relationships as merely subjective.

Classical Science	Contemporary Science
Substance only; materialism	*Both* substance *and* event-oriented descriptions
External relations only	*Both* external *and* internal relations
Continuity only; no discreteness	*Both* continuity *and* quantization
Symmetry only	*Both* symmetry *and* asymmetry
Space only; time spatialized	*Both* space *and* time; coupled space-time metric
Determinism only	*Both* predictablity/determination *and* indetermination
Particles only	*Both* particles *and* waves; many dualities
Parts only	*Both* parts *and* wholes
External only source for order	*Both* external *and* internal sources of order
Efficient cause only	*Both* efficient cause *and* other types
No intrinsic parameter limits	Fundamental limits set through physical relations

From Eastman, T. E., "Process Thought and Natural Science," *Process Studies* 26/3-4 (1997), 239-246.

Newton -Classical Physics	Einstein -Modern Physics
Externally-related objects	Internally-related process
World view of perceptual objects	World view of quantized fields
Entities as externally related	Entities as both internally and externally related
Formalized in Newtonian framework	Formalized in modern quantum and relativity theories
Generates Hume's problem of causation	Solves Hume's problem of causation
Spatialized descriptions	Centrality of relatedness
Linear dynamics	Nonlinear dynamics - systems must be treated *as* systems
Ecology undeveloped - neglect of systems	Ecology developed - centrality of systems
Evolution undeveloped - neglect of historical dimension - focus on structure vs. process	Evolution as fundamental - historical dimension - deeper study of invariant relations
No unified story of physical systems	Development of cosmic creation story

Field theory, nonlinear dynamics, quantum theory, and systems theories help level the philosophical playing field so that the best evidence and arguments from the humanities and the human sciences can be applied to the altruism question without threat of being ultimately undercut by a simplistic reductionism.