

"but let Time's news  
Be known when 'tis  
brought forth"

# Time's News

An  
Aperiodic  
Newsletter

Time's News No. 26

International Society for the Study of Time

December 1995

## A MESSAGE FROM THE PRESIDENT

At the business meeting of the Society, in Sainte Adele, a brief questionnaire consisting of six items was passed around to all those in attendance. It was the first part of a larger questionnaire sent to the membership after the 1992 meetings by David Burrows, then chairman of the Evaluation Committee. This inquiry concerns only issues involving the last conference. Other, broader matters concerning the Society and its future, such as the composition of the membership, elections, programming, etc. will be contained in a more extensive, possibly open-ended, questionnaire to be mailed to the membership in the near future.

Responses to the six questions were tabulated and treated statistically, but since the sample was rather small--34 respondents--I shall not bother you with graphs or tables; the figures alone are not sufficiently productive, but some of the individual qualitative comments are insightful and suggestive. Hence, this brief report is both quantitative and qualitative in nature.

Overall, the facilities of the conference covered by the first three questions were rated very highly. On a scale of 1 to 10, the median rating for the individual accommodations (Question 1) is 8. The same rating is given the location of the facility (Question 2) and the rating for the "meeting facilities" (Questions 3) is 9. Based on the numbers only, it can be concluded that Sainte Adele was a very satisfactory setting for the conference.

A few respondents found the cost a bit steep, the individual rooms a bit skimpy, and the surrounding area a bit confining, with limited space for walking or jogging. But, overall, and for most members, the ambience was rather satisfactory.

The next three questions concerned the scientific style, quality, and contents of the conference. Question

4 involves the matter of the desirability of the "single theme" (such as "Time, Order and Chaos") approach. A majority of the respondents (60 percent) find the single unifying theme desirable; they feel that the single theme provides an appropriate focus to the conference. Some saw danger in a focus that becomes too narrow and forces the presenters of papers to invoke the theme even if its relation to their topic is rather remote. A subset of respondents proposed a sort of compromise position. The program is to have a major theme or focus for part of the conference, while the remainder of the time is to be "wide open" and allow a freewheeling programming.

Many of the responses to the question whether the number of papers should be limited to allow more time for discussion (Question 5) were enlightening and informative. In general, responses included the following recommendations:

- a. Shorter papers and distribution of abstracts, or entire manuscripts, at least one month prior to the conference
- b. More sessions of discussion groups
- c. Interdisciplinary as well as specialized panels

Finally, (Question 6)—a slight majority of the membership felt that the papers presented at the conference were of high quality and no stricter selection criteria need be applied. A few felt that some papers were not sufficiently self-critical.

In conclusion, although the material presented here is not "scientific" in the sense of a procedure followed by a strict pollster's sampler, it is informative nevertheless. It may not offer a sufficient basis for decision-making but may serve the Council of the Society in its planning and programming for 1998. Needless to say that additional communications from individual members concerning these matters are welcome.

Al Rabin

## THE FOUNDER'S COLUMN

The first Founder's Column appeared in Time's News No. 5, March 15, 1980. It began with, "The purpose of this column is to provide a measure of continuity in the newsletter, on a level detached from technical issues." That remains its purpose.

At our recent meeting in Canada the question arose: How multidisciplinary is the membership of the Society?

Membership during the first two years of the Society's existence was as follows: Anthropology, 1; Biology, 3; Chemistry, 1; Clocks and Watches, 1; History, 1; History and Philosophy of Science, 6; Literature, 2; Mathematics, 1; Medicine, 1; Philosophy, 5; Physics, 9; Psychology, 9; Religion, 2.

Three decades later, based on information I have at hand, the professional distribution of our membership is as follows: Agricultural science, 2; Anthropology, 7; Archaeoastronomy, 4; Archeology, 2; Architecture, 1; Astronomy, 1; Biology, 10; Business organization and management, 8; Chemistry, 3; Literature (English, German, Brazilian, Japanese, Classical, Comparative), 30; Computer Science, 1; Cultural studies, 1; Economics, 6; Education, 7; History and philosophy of science, 14; History of Ideas, 1; Journalism, 2; Law, 2; Library Science, 1; Linguistics, 1; Mathematics, 5; Medicine, 19; Meteorology, 1; Music, 16; Nursing, 1; Philosophy, 22; Physics, 23; Physiology, 2; Political Science, 5; Psychology, 38; Public Policy Analysis, 1; Religion, 8; Sociology, 22; Statistics, 1; Study of Time, 1; Technology Studies, 1; Theater, 2; Visual Arts, 2; Women's Studies, 2; Writers (fiction & science), 4.

Through the years I have received many dire

warnings: if we do not have more people from [fill in your field] the Society is doomed to fail. But we have no practical way of influencing the distribution of professional representation in ISST. Our membership reflects the changing trends in academic life which, in turn, reflect prevailing trends in cultural emphases.

There is an influx from a field when people working in that field feel that they may benefit from delivering and perhaps publishing a time-related paper. When, through a number of years, we gain no new members from a particular faculty of knowledge, this reflects the belief of the men and women, working in that field that they do not have anything important or interesting to contribute. If tomorrow there were an upsurge of interest in the role of time, let us say, in the studies about the foundations of mathematics, soon thereafter we would be receiving membership applications from people studying the foundations of mathematics.

Danger to the work of ISST does not come from under-representation from any particular domain of knowledge but from issues of quality. In that respect, the Scottish prayer comes to mind:

*"From ghoulies and ghosties and long-legged beasties/And things that go bump in the night, Good Lord, deliver us!"* From good-willed dilettantes and from critics without self-criticism, Good Lord, deliver us.

Since the Lord helps those who help themselves, we will keep on depending on the admission policies of the Council. These have been successful in maintaining the intellectual excellence by which ISST has been, must be, and can only be judged. JTF

## REPORT OF THE EXECUTIVE SECRETARY

As a result of discussions at the St. Adele conference this summer, the Council has determined to expand Society services to facilitate communication among members. For members who have access to the Internet, the Society has initiated a List service whereby members with e-mail are able to provide information and exchange ideas with other members. The List service is open to all Society members, and only to Society members, in good standing. Members on the List will receive all messages sent. Those who have not received messages and wish to be included in the List service should provide their e-

mail number to Thomas Weissert at the following address: weissert@sju.edu. All members in good standing who provide their e-mail numbers to Tom will be included in the List service. Members are strongly urged to utilize the service for discussions, arrangements, information on time-related ideas, publications, or conferences.

The Society is also preparing a more comprehensive Directory of Members than the membership list previously provided. Included in the directory, at the suggestion of several members, will be the member's academic discipline or other area of expertise. Also included, if the member

so requests, will be telephone, fax, and/or e-mail numbers. Please note that these numbers will be included in the directory only upon request. Although ISST will provide the directory only to members or to those requiring it for official purposes, our membership is large enough and diverse enough that copies may become available to non-members. For reasons of privacy or concerns regarding commercial use, some members may prefer that numbers not be listed in a directory.

In many cases academic disciplines or other areas of expertise can be determined from the application a member initially provided upon joining the Society. If you wish more information listed in the directory, you may provide the information on the form included with this newsletter. Send it to me at PO Box 67, Westerville, OH 43081. You may also send information to me by e-mail at 75564.2033@compuserve.com.

Finally, a cautionary note. The Council of the Society has listened to the diverse concerns and suggestions of many members in determining to institute the changes outlined here. A society for the study of time; Council recognizes, cannot presume to be exempt from the demands imposed on all organizations to change with time. If the study of time does not teach that change is necessary, it teaches nothing. Nonetheless to change over time is not the same as "changing with the times," a phrase which serves to remind us that change

can be ephemeral and dependent on understandings of different kinds of time that do not last.

The ability to have words, ideas, and information flow around the world instantaneously in what has come to be called "cyberspace" is, no doubt, creating a different world, or, more accurately, is making different kinds of worlds possible, depending on how people react to the wider diversity of ideas made present. Possibilities are human projections into the future, ultimately dependent upon what human beings, usually working in cooperation, can make of them. The International Society for the Study of Time has provided not just times, but also places, where people with diverse interests and knowledge can gather under a unifying theme, and have a kind of diverse contact that is not possible through either books or electronic communication. These conferences permit us to remove ourselves for a short time from current routines of temporal organization and to consider different times. Although there are wider possibilities for communication among members between these conferences, we should not lose sight of what has previously brought us together.

The significance of time study lies not simply in what is new, but rather in how the new can be integrated with what has come before. If you have questions or suggestions regarding the Society or its functioning, you may contact me at the addresses above.

Mark Aultman

## THE J. T. FRASER PRIZE OF 1995

*Barbara Adam*

The first winner of the J. T. Fraser Prize of The International Society for the Study of Time is awarded to Barbara Adam for her book *Timewatch: The Social Analysis of Time*.

In her book, Adam vigorously demonstrates the shortcomings of Enlightenment-inspired methods to encompass the temporal dynamics of everyday life. She persuades us that the conventional idea of a single linear time—the time of the clock—conceals the

complexities and the meanings of the many times that are embedded in it: times set by our lives, environments, social relationships, and more. In her work Adam opens a hitherto neglected field of research and offers new tools of investigation in the social sciences, not limited to the usual shortsighted rationalistic surveys or to dichotomous classifications of social activities. She writes of human needs and feelings.

## TIME'S BOOKS

Beginning with this issue, the Time's Books column will have two editors.

Dr. J. T. Fraser	Prof. Claudia Clausius
Book Review Editor	Book Review Editor/
Time's Books	Time's Books
PO Box 815	Concordia University/
Westport, CT 06881	Liberal Arts College
USA	1455 de Maisonneuve Blvd. W
	Montreal, QC H3G 1M8
	CANADA

Address all correspondence concerning this column to either editor.

The total number of books so far reviewed in this column is 237. The opinions stated are those of the reviewers and the reviews are their intellectual properties. But, since they are copyright *Time's News*, if you wish to quote from any of the reviews or republish a review written by you, please cite the newsletter (and its date) as your source.

If you wish to write an unsolicited review, please check with either book review editor for a preliminary approval, length, and deadline. Note that we are not looking for synopses but for professional peer criticism.

Reviewers in this issue:

(MHA) Mark H. Aultman, Westerville, OH  
 (MMB) Margaret M. Barela, Albuquerque, NM  
 (RAB) Richard A. Block, Bozeman, MT  
 (JB) Jens Brockmeier, Oxford, England  
 (CC) Claudia Clausius, Montreal  
 (TC) Tim Cloudsley, Glasgow, Scotland  
 (LF) Lawrence Fagg, Washington, DC  
 (JFF) Jane F. Fraser, Westport, CT  
 (SG) Sabine Gross, Madison, WI  
 (CFH) Christopher F. Hasty, Princeton, NJ  
 (OPH) Olga P. Hasty, Princeton, NJ  
 (VKJ) Victoria Koehler-Jones, Sacramento, CA  
 (TK) Tim Kasser, Bozeman, MT  
 (HN) Helga Nowotny, Vienna  
 (DP) David Park, Williamstown, MA  
 (THS) T. H. Seidler, Heidelberg  
 (MPS) Marlene P. Soulsby, Scranton, PA  
 (MU) Montague Ullman, Ardsley, NY

Adam, Barbara. *Timewatch. The Social Analysis of Time*. Cambridge: Polity Press. (1995)

"When I think about time I think that it won't be long before I am old and die. We have only so much time to live and that is not very long at all. Well, take my mum, for example, she is old now and she will die".

The person who speaks is David, a ten year old pupil in a village primary school. His mother is thirty-five, suffers from multiple sclerosis and has been tied to a wheelchair for the last five years. In conversation-interviews such as these, Barbara Adam attempts to reveal the multiplicity and breadth of conceptualization of time in every day life. As her results show, they are full of surprises with death emerging as an unexpected feature in many reflections. Her central tenet is that the network of meanings that human beings continuously weave and reweave becomes visible in talking about time. It shows itself embedded in social interactions, structures, practices and knowledge; in technologies and the mindful body, in global social relations and in environmental hazards. The association of time with clocks and calendars combines with that of deadlines, routines, milestones, stress and aging. Past, present and future are linked with life-stages, activity and commodity. What Barbara Adam presents us with is a new empirical grounding of the times of everyday life and experience. Focusing on the personal, unique and highly individual moment experienced as "my" time, "our" time and "other" time, she uses this as her vantage point to let social times unfold. She takes the everyday experience of time seriously and makes the personal central to her work.

In this engagingly written and persuasive book, the person-centered perspective is deliberately directed to ground the sensitivity thus elicited in social science theories that are yet to be constructed. Adam claims that most social science theorizing is still steeped in 19th century frameworks of understanding, in the machine technology of Newtonian physics and, more generally, in the epistemic framework of the Enlightenment that is deeply marked by dualism, such as nature/culture, subjective/objective, self/other or mind/matter. All her empirical groundings of the complexity of social times reveal interconnections and linkages instead. Thus, it is not an either/or framework in which meaning unfolds, but one in which, for instance, the unique and highly



personal experience of time of women giving birth, remains nevertheless tied to globally standardized, decontextualized clock time, just as universalized artefactual time invades the uniquely variable time of the mindful body. Networks of meaning and interlinkages are carefully and caringly described in the domains of time and health, life and death; in organized schooling and in learning the habits of clock-time; in the time economy of work relations; in the globalization of times and the impact of electronic technology with its simultaneous material and immaterial, visible and invisible dimensions and, last but not least, in the temporal dimensions of pollution and the times of global environmental change. In all these social settings, familiar to the social analysis of time and familiar on the level of everyday, personal experience, usually taken for granted, is brought out in fine strokes of the sociological brush. The implicit is made explicit, visible and presented by the author in a passionate demand for appropriate theorizing.

This is where Barbara Adam's open agenda for the everyday and personal grounding of a different conceptualization of the contemporary complexity of times comes in. She takes issue with what she calls the traditions of Enlightenment thought and urges a creative renewal of the social sciences in bringing together the personal and the global, the technological and the literary, the bodily and the scientific, totalizing tendencies and local particularities. But she warns about simply replacing one set of dualisms with another. It would indeed amount to falsifying the contemporary experience, she contends, if the hegemony and the central importance of the abstract, decontextualized medium of clock time were denied. Personal, fragmented, embedded and multiple embodied times cannot be valorized at the expense of standardizing and universalizing time. What is needed instead, are conceptual strategies that allow for contradictions and untidiness, for the unwieldiness and awkwardness of complexity. This demands an epistemic stand she calls implication--to acknowledge that the whole is implicated in any single phenomenon or event. It is a radically multiple perspective that is unfolded here within a framework of understanding that adopts an intensely political-moral approach. It is rooted in Adam's deep conviction that the social sciences are an inescapable moral enterprise: "where mastery fails morals become an imperative".

This book will "implicate" its readers. The everyday experience of the complexity of times is shared by all of us. We all have our stories to tell, our meanings to attach, and we live our social relations in their temporal and complex multiplicity. The extent to which it will also

"implicate" future theorizing in the social sciences depends on the degree to which social scientists are already on the way towards a different mode of theorizing. Undoubtedly, for social scientists the book contains some disturbing challenges, and Adam's claim to recapture the moral enterprise for the social sciences will not go undisputed. But the radicalness of her challenge and one's response to it will ultimately depend upon one's current experience of social science theorizing and practice. The rethinking, not the unthinking of the Enlightenment project and its epistemic assumptions, is well under way in many places today. Social studies of science and technology and historians of science are intensely engaged in claiming the centrality and time-dependence of the context within which theorizing occurs. The observer is no longer separated from the observed and science is viewed as a profoundly cultural practice. Technology is viewed as part of a seamless web in which actor-networks, other artifacts, and institutional arrangements are involved. Towards the end of the book Adam evokes the "temporal turn" in postmodern theorizing, while defending at least part of the Enlightenment project despite her severe critique. This should be highly welcomed as a contribution to these ongoing scholarly efforts. The contribution Adam makes is unique in the sense that it comes from a passionate heart and a deep moral stance, while being written in a clear and lucid style. By focusing on the complexity of the everyday experience of social times, she has opened a vast field of reconceptualized temporal problematic. *Timewatch* stands a good chance in initiating a truly new social science of times and temporality.

(HN)

Benford, Gregory. *Timescape*. (Bantam Books, 1980)

In this science fiction novel it is 1998 and the human world is disintegrating in the throes of ecological disaster. It is also 1962, and John F. Kennedy is bringing hope as a U.S. President while the Vietnam War, like the beginnings of ecological disaster, is, for most people, unknown and distant. Amid the deteriorating English landscape of 1998 Cambridge, and media reports of increasing human dieback, a physics professor, weary of begging the World Council for ever-diminishing funds for scientific research, is using patchwork equipment to attempt to send a message to the past.

He is utilizing tachyons, particles that travel faster than the speed of light, can be focused in a beam, and pass through ordinary matter. They can thus be shot across light years, rendering it theoretically possible to

communicate with appropriate receivers. There was an experiment in 1963 that had the capacity to be a receiver. This is not the paradox of killing your grandfather, a cohort explains, this is the communication of information, in a wave that travels both into the future and the past. Logic, he says, rules in physics, not the myth of cause and effect. Can we even know that the world in which we exist is the only one?

In 1962 another scientist is trying to figure out why his experiment is receiving unexplained noise. He enlists experts from other sciences to help explain what appear to be messages. They contain a scientific formula warning of experiments, likely to set off a chain reaction, being carried on in sea water. But if he is too explicit as to what he suspects is the source of the messages, his career will be in jeopardy.

Families and friends are caught up in the fortunes of these times. One world deteriorates into social, political, and psychological chaos, as those who know, those who don't, and those who suspect find they can no longer live and work together. In the other, family and other relationships break apart, the media report and misreport, and the story moves on toward November 22, 1963, when Oswald shoots from the School Book Depository in Dallas, and then beyond, when messages from 1998 can no longer be received.

This book is better than can be told from this short description. Written by a physicist/astronomer who is also a good storyteller, the explanations of sub-atomic physics, the characterization, and the plot development are all sound. The descriptions of a world very close to our own being overtaken by ecological disaster are vivid and compelling, more so because they avoid horror movie cliché and show people adapting, going on with lives that some do not even know, and others dare not think, have been diminished.

What this novel brings to mind, though, once the abstractions of logical explanation have been removed, is the same problem that arises with those who use theories of reincarnation or afterlife to avoid confronting the present. The idea that there is another life, another time, another world, where there is a second chance, may lead us to miss the best, sometimes the only, chance we have in the only life we know.

Where second chances exist in other worlds, the saddest words, "it might have been," like death, lose their sting—and also their meaning. That it might still be because science may one day find the answer is a dangerous illusion—science already tells us what the world will be like if present trends continue unabated, and though we lack the political will we already know

intervention is necessary. Timescape cannot mean that scientific knowledge will, eventually, allow us to escape from time. So far as ecological awareness is concerned, "it might have been" and death are, eventually, one and the same. (MHA)

Cleary, Thomas R., Ed., Time, Literature and the Arts: Essays in Honor of Samuel L. Macey. Victoria, Canada: University of Victoria Press, 1994, 216 pp.

English Literary Studies' 1994 Monograph Series honors its founding editor with a Festschrift entitled Time, Literature and the Arts: Essays in Honor of Samuel L. Macey. Editor Thomas R. Cleary's opening remarks explain that the essay topics reflect Samuel Macey's particular interests as well as their evolution and development throughout his energetic life. It is this perspective that gives the volume its personal touch. Another thoughtful addition (and I am thinking here mostly of the reader) is the three-page Samuel Macey Bibliography which is both complete and up-to-date; the last listing cites Macey's General Editorship of the Encyclopedia of Time published by Garland in 1994. This Festschrift points to what is for many the attraction of time studies—its flexible interdisciplinary epistemology for issues pertaining both to genre/discipline and history. For instance, in his "Pictorialism in Eighteenth-Century Fiction: Visual Thinking and Narrative Diversity" Robert Merrett investigates the visual narratives of Defoe and Richardson through the aesthetics of Joshua Reynolds. With entirely different aims, Donald Greene and Patricia Koster chart the function of adaptations of a intertextual allusions to earlier texts. Comparing John Gay's The Beggar's Opera with Bertolt Brecht's Die Dreigroschenoper Greene argues that although the earlier play is a "more profoundly searching comment on human psychology and morality" than the latter's drama of social realism, to Brecht nevertheless goes the credit for rescuing Gay's play as a "dainty" and sentimental drama to one specifically concerned with social and political commentary. Koster's "Purcell's Swan Song: A Long Reverberation in Women's Fiction" uncovers evidence that listening to a tune such as Purcell and D'Urfey's "From Rosie Bowers" as opposed to humming it can disadvantageously situate a woman in the gender struggle. Looking at the literary use of history in this century, Paul Alkon in "Alternate History and Postmodern Temporality" concludes that our study of the past has gone from being diachronic to synchronic. We apprehend the past as simply one more element of the

present. Through a reading of several postmodern parallel and alternate histories, Alton differentiates between the classical mode of alternate history and the postmodern alternate history which testifies to our "condition of cultural amnesia compounded by schizophrenic inability to distinguish between present and past time."

In "Eighteenth-Century Musical Openings" Lewis Rowell writes the kind of article that makes you eager to replay the music by Bach, Handel, Mozart and Beethoven to which he alludes. Dividing his discussion of musical beginnings into the tactical and the strategic, Rowell argues that musical beginnings prior to about 1750 announced their "genre" while those of the latter half of the eighteenth century try to generate "long-range but discontinuous relationships" between themselves as beginning and the remainder of the musical composition. One of the recurrent views suggested in these essays is that in all its diverse articulations the temporal concept in literature, music, historical writing, and fine art carries with it an unmistakable and unique sense of alienation, doubt, and anxiety. Ricardo Quinone's essay "Upon this Bank and School of Time": Triumph Literature in Dante and Petrarch points to the exiled Dante as the "recording secretary of a society." Looking at the "habit of mind" of the time, Quinones characterizes the 14th century as an age torn between a revival of the Roman sense of glorious accomplishment and its own "haunting vision of nothingness" which looks forward to the modern and post-modern frame of mind to come. A more personal kind of history and genre come together in George H. Ford's "Time and the Sound of Waters in a Late Lyric by Tennyson" which examines how one specific episode in the poet's life--a visit to the beautiful town of Caudebec in the Pyrenees with his friend Arthur Hallam--becomes a Wordsworthian "spot of time" in Tennyson's poetry through the lyric's (re)creation of *sound* as opposed to color or image as a way to recapture and not merely to recollect experience.

Travel literature as literary history and (auto)biography is featured in Thomas Meier's "Johnson and Boswell in Scotland: The Interplay of Prejudice and Patriotism" which takes to task the popular tradition of Johnson's prejudice against the Scottish. The article reexamines this dislike but also demonstrates changes in Johnson's view, even to the point of sympathetic involvement in Scottish affairs through strongly-held opinions. The essay shows also how Johnson's prejudice becomes a source of entertainment at points for his friend and later of course for both their subsequent readers.

Despite its commemorative function, this *Festschrift*

does not hesitate to engage its contributors in debate and disagreement. The metaphor implicit in Frederick Turner's "The Branching Tree of Time" rightly cautions us against the "hideous...temporal colonialism" tree where the "present is always a branchpoint. The earlier produces the later by causality; the later draws the earlier by competitive influence." Nevertheless, revisionist topics such as Juliet McMaster's lively essay (and Koster's above as well) "Biological Clocks: Time, Gentlemen, Please" is a helpful look at how the novel genre in particular tries to efface the unique type of female heroism of pregnancy and childbirth in which men can have little part. Her "project of recovery" as she calls it compares descriptions of pregnancy and childbearing in an effort to uncover male censorship and to expose the artful reinscriptions of such female biology into the novels of the eighteenth- and nineteenth century. The volume closes with the kind of historical overview by J. T. Fraser for which an informed general readership is always grateful. From astronomy and mathematics to horology and philosophy, Fraser walks firmly and assuredly through the intricate paths of the influences *on* and the influences *from* the eighteenth century sense of time, infinity, and eternity. Samuel Macey has reason to be pleased with this varied and informative selection of essays.

(CC)

Epstein, David. Shaping Time: Music, the Brain and Performance. New York: Schirmer Books, 1995. 483p.

An author sets standards by which he wants to be judged when he states his purposes and target audience, thus determining the topic's boundaries and language appropriate to the discussion.

That said, author/conductor David Epstein has written Shaping Time: Music, the Brain and Performance an ambitious 500-page tome attempting an interdisciplinary exploration of tempo and musical proportion. His preface states "the musician" (or the musical performer, as implied in his subtitle) to be his intended reader. What is promised as "shaping time", a gerund suggesting performance art, a time art (e.g. the dance), is delivered more as pre-packaged "time shaped"—time already shaped, a space art (e.g. sculpture).

A review of current theories of rhythm and a discussion of other disciplines (such as the neurological sciences, perception, cognition, to mention a few) precede his discerning and lively examination of several musical works.



Despite the imprimatur of an impressive list of experts, the book remains decidedly user-unfriendly from several standpoints.

Instead of speaking as a performer to performers and informed "armchair musicians" Epstein lays the groundwork for his analyses in the technical vocabulary of music theory and other disciplines—as if to earn the blessing of their practitioners. ("Demarcation, being structural, is effected through accent." p. 28) With no carryover of terms (e.g. demarcation—from which discipline does this term come? Not music theory. What precisely does it mean here?), he jumps to a different parlance more common to performers. Granted, Epstein can speak as a music theorist, a conductor/performer or a listener. But his use of passive voice sometimes obscures which perspective he has assumed in a given context. More than one voice, indeed, more than one language emerges. At the same time, confusion is created because Epstein fails to inform the reader which perspective he has assumed. For example, when he states "Accent is shaped within time—within duration" (p.29), does he mean it is shaped by the composer, by the performer or by the listener? Shaped into what? Furthermore, is it so clear that accent is just shaped? Or can it be more? Can it be a shaper?

The study would be far more useful to performers if a glossary and more extensive index were provided to locate the first use of terms, key definitions, and distinctions. Such an aided study would bow to the right-brained, paradoxically more holistic (as in hologram) approach toward which performers tend. It would allow dipping into discussions at will, rather than forcing a left-brained, cover-to-cover reading, as recommended in his preface.

It was frustrating to skip ahead to discussions of works, encounter specialized vocabulary such as "ground beat" and "ground pulse", and then not find them in the index. The absence of the term "agogic" (an expressive lengthening of a note's duration relative to the rhythms surrounding it) calls attention to the gulf between music theorists and performers when it comes to the technical language each group uses. "Agogic's" absence goes without an explanation.

Epstein shows the performer how to pull a piece apart, but not how to reassemble it. Take his discussion of rubato (chapters 10, 11, 12) in which the musical texture exhibits elasticity. As in slowing a movie film to examine the stills, his discussion can enlighten. But for performers, the danger lies in the possibility of inducing a self-consciousness that precludes a mental "reacceleration" such that the spaces between the stills

disappear. That "reacceleration" is what allows motion to assume character and become seamless, flowing, natural, effortless. The large flowing gesture can reemerge after a setting aside of the "grid", "scaffolding" or barline that identifies placement of a gesture's important elements.

Epstein's interdisciplinary curiosity is admirable. Yet his ideas, while valid, suggest that music somehow submits to formulaic solutions. His hundreds of pages devoted to carefully calculated proportions don't seem to allow for adrenaline's effects, which can distort one's sense of time and derail the best-laid plans. Absent here is talk of judgment in the creative moment of performance: the flexibility to compensate and correct, weigh and balance *in performance*. Complications only multiply as the number of performers increases.

Epstein's musical analyses are engaging, thought provoking, valuable interdisciplinary exercises in performance appreciation. The author cares deeply about music. In examining musical works, he proves he *can* speak the language of performers, his target audience. But in laying important groundwork for his insights—where speaking their language matters most—he doesn't. (MMB)

Fagg, Lawrence W. The Becoming of Time, Athens, GA: Scholars Press, 1995

The Becoming of Time, Scholars Press, Athens, GA (1995), subtitled "Integrating Physical and Religious Time," by Lawrence W. Fagg, is a superb introduction to many of the themes which ISST has considered over the years. Professor Fagg is able to explain difficult scientific principles in language a dedicated reader can grasp, and his summaries of major temporal themes in religion and philosophy are lucid and compelling.

The integration the book achieves, though, is not an integration of physical and religious time into one intellectual system. Rather it is a recognition that science and religion look at time differently. Running throughout much of the book is a distinction between two fundamental modes of knowing or experiencing events. They can be ordered subjectively as past, present, and future, corresponding to what is called an "A series" characterized by a continuously changing present with a constantly progressing division between past and future. They can also be ordered objectively, as before and after as seen by an observer not participating in what is observed, corresponding roughly to a "B series" that is more static but more orderly. Time, the introductory chapter claims, is a duality. The book raises questions as to whether this



duality is the result of some underlying unity or reality, whether it is an aspect of different language or measuring systems limited in scope and unsuited to tasks of integration, as well as the extent to which these and other explanations may all be true at once.

The author suggests there may be a kind of generalized complementary principle with respect to science and religion. The reference is to Bohr's principle of complementarity which illuminates the fact that in quantum theory light or electromagnetic radiation, first thought to be wavelike, turned out to have properties of particles, while microscopic matter (particles such as electrons, protons, etc.) was found to have wavelike properties. The principle stated that the wave and particle modes are mutually exclusive but complementary (that is, that either may be applicable depending upon how we view or measure, but for each measurement only one or the other will result, even though for the most complete picture or explanation both are necessary).

The book's consideration of time in religious and philosophical thought is at first kept separate from science—with separate chapters and labels. This becomes less true in later chapters where they tend to be juxtaposed and in some instances integrated. The views of religious time are necessarily broad, summarizing views of time in major world religions. Big bang theory, time as beginning, and the irreversibility of time, for example, are compared with Judeo-Christian-Islamic, and other, views of creation and of time as cyclical rather than unrepeatable. The evidence that establishes a "direction" to time, including what Fagg calls the cosmologic gauge (expansion of the universe) the thermodynamic gauge (the tendency of an isolated system to pass to disorder), and the psychobiologic gauge (the growth of far-from-equilibrium living systems) is reviewed in some detail.

Fagg argues, though, that we tend to "overspatialize" time, and avoids the use of words such as "arrow," "direction," or "linearity." He believes they rob time of its unique and dynamic character. He notes (p. 157) that "attempts to quantify this character by means of a mathematics delineating" sequence and duration have so far been unsuccessful. He calls for a "liberation of time," quoting Piaget: we have a "geometry derived from an abstraction of space, but no chronometry derived from an abstraction of time." To the extent that abstraction involves a process of mental separation, however, this quotation may not support Fagg's most important points.

A pivotal chapter in the book is one entitled "The Moment: Increment in Time and Space." Martin Buber, and to a lesser extent Kierkegaard, lend the chapter a dynamic existentialist tenor. It moves rapidly from the

"moment," when "time and being merge," through the ideas of Whitehead, the psychological and physical "now" (which Fagg posits as existing in primitive form in nature) and into simultaneity and the question of whether time and space are, on some scales or levels, discontinuous.

This latter problem, at the level of particle physics, is sometimes described as one of creating a new language to describe quantum reality. It may signal the need to separate functions that have traditionally been served by human language—to understand a world viewed as objective and to communicate with others. As to time, it will make a difference if time is not an object, capable of (definitive) study, but rather that which is signified by the words we use to describe (in language—the only way we have to think and communicate) what are essentially mental processes actively participating in, and changing, what is known or observed.

Bohr once remarked that reality is a word which we must learn how to use. The same is true of time, and if we are going to use the word we must first learn how it permeates the thought of our entire culture—material, intellectual, and spiritual—and that is the value of books like this.

(DP & MHA)

Florensky Foundation. Of Origins of the World in Science and Technology. St. Petersburg (Russia): Petropolis, 1993.

This book, produced by the International Fund for the Investigation of Science and Theology based in St. Petersburg, consists of twelve papers in Russian covering some 200 pages, the remaining 164 pages contain seven papers in English plus six short abstracts. I can only make comments on the English portion of the text.

Of the seven papers the one by W. B. Drees, entitled "Timelessness in Cosmology and its Relevance for Philosophy and Religion", is the most comprehensive and lucid. Drees first treats the concept of time in cosmology, discussing among other things the quantum cosmologies of Hartle, Hawking, and Linde along with the thought of Penrose and Tipler. In general they seem to look upon time as a phenomenological construct, one which is only valid in the "large space" we live in, not for the "small space" of the Planck era. Drees goes on to treat the doctrine of God, concluding that God's transcendence with respect to space and time is characterized by timelessness. Finally Drees questions the emphasis on temporality in religious views of the universe as well as the idea of a strict beginning of time with the Big Bang.

M. C. Duffy, after presenting an historical survey of the time concepts of Newton, Maxwell, Lorentz, Poincaré, Minkowski, Einstein, J. J. Thompson, among others, primarily maintains that the introduction of metaphysics into physics in discussion of the origins of the universe is unwarranted, especially to justify theological speculation. A. V. Nesteruk, drawing considerably on Heeler's concept of a participatory universe and Tipler's concept of a final "Omega Point" for the universe, discusses various aspects of the Anthropic Principle and concludes that the physical space and time of the universe somehow derives from some form of transcendental consciousness. M. Pienkowski gives a commentary on time concepts in physics and metaphysics based largely on the thought of Bergson and Whitehead. The final paper by K. S. Schmitz-Moormann compares creation *ex nihilo* with the concept of the quantum vacuum and the Big Bang.

Of the abstracts, M. E. Burgo's thoughts on time irreversibility and quantum mechanics were noteworthy wherein he concludes that irreversibility is based on spontaneous "projections" (wave function collapses) resulting from interactions between microsystems. Also of note are G. Gale's remarks on Milne's cosmology, in which space is reduced to time, and time to signalling operations shared among observers.

Although allowances should perhaps be made for the fact that this may be the first publication of this organization, the proofreading is atrocious, if not non-existent. On virtually every page there is a word where a letter is deleted or an incorrect one inserted, and this even in titles. Frequently words are missing; some sentences are incomprehensible; in one instance almost a whole paragraph is repeated. All of this in addition to some inconsistency in the quality of the papers makes it difficult to strongly recommend this book. (CLF)

Gross, Sabine. Lese-Zeichen: Kognition, Medium und Materialität im Lese-prozeß. Darmstadt: Wiss. Buchges., 1994. 158 pp.

The title Lese-Zeichen has a two-fold connotation: *Lesezeichen* are bookmarkers, objects fixing a specific point in space; *Lese-Zeichen* refers to the signs that affect the process of reading. Gross investigates the spatial-temporal relationship in the reading process. She draws on research in the areas of cognitive psychology, literary and aesthetic theory, semiotics, and art history. Her analysis of reading literary texts falls within a broader-based understanding of reading in general, cognitive processes involved in the construction of

meaning, and signification systems. She questions attempts to distinguish different media based on a strict dichotomy of space and time, and instead suggests that the differences represent different positions within the parameters of a text-space-time structure.

Her analysis focuses on variations and mixed forms of three different media: written text, image and film. They each build a space-time structure in which the spatial arrangement provides the basis for the temporal reading process, during which a time becomes associated with the contents. The spatial order and material layout have a significant and multi-faceted effect on the temporal process of reading and generating meaning. In the apprehension and understanding of a picture, for example, it is impossible to eliminate temporality, as the eye moves from point to point, on various visual elements. Likewise, a written text presents us with a two-dimensional surface, an arrangement, and a material substantiality. Reading involves visual and cognitive movement through the spatial arrangement, which is thus transformed into hierarchical structures of meaning. Sequentiality of reading in time is not necessarily bound by the linearity of the written word. Some forms, such as iconic figure poems, deliberately disrupt linear processing of poetic elements. In a longer narrative, such as a novel, we may read the ending first, or anticipate future events, or the final resolution of conflict, based on where we are in the book itself.

In this book Gross deftly combines the theoretical with the practical, providing a wide and intriguing array of examples and probing analysis. She causes us to rethink our assumptions of space-time within the context of the reading process and to recognize the complex interaction that occurs between cognition, the need to construct meaning, the medium itself, and the materiality of the text that a reader confronts. She also causes us to reflect on the gradual dematerialization of the text in this age of electronic communication. Lese-Zeichen has an interdisciplinary approach and understanding that gives a solid, broad-based context and relevance to the subject matter. It provides a far-reaching insight into the complexities of textual and reading strategies and focuses on recognizing relationships, connections and distinctions of degree rather than constructing a rigid paradigm. This book is well worth reading. (MPS)

Høeg, Peter. Borderliners. New York: Farrar, Straus and Giroux. 1994. 277 pp.

Does a young child have an awareness of long term pasts and futures? Especially a child who is without

family, without an anchor in society, a "borderliner?" Peter Høeg, a Danish novelist, describes in lurid detail an experimental and repressive Danish education for a child, from early childhood to young teens in the 1960's and 70's. The main character, named Peter by coincidence or otherwise, is without family, friends, a home, or time.

Peter is on the edge of society. He is a borderliner, hence the title. His history as an orphan includes daring adventures with peers, such as swinging on a rope before a speeding train. He has nothing to lose, he has no investment in his identity. Without his knowledge he has become part of an experiment conducted by the State. He is taken from an orphanage and placed in an exclusive private school outside Copenhagen. The Headmaster of this school, Mr. Biehl, is a blustering, tough, controlling individual who is anxious to participate in this experiment which takes youngsters who are orphans, sometimes criminals, and attempts to educate them alongside other children. Biehl's Academy, the private school in which Peter is enrolled, has a repressive atmosphere. It is run by privileged adults with no regard for the rights or interests of children. Peter and his friends, Katarina and August, are made to feel separate and apart from everyone because of their past histories that are the basis for the educational experiment which put them at Biehl's Academy. They are under constant surveillance, not allowed to talk with one another. This sets up an interesting chain of events as the three elude the adults and begin to plan ventures together.

Katarina and August become Peter's first family. They begin to conduct an "experiment," learning about their own pasts together with learning about time. This is a dangerous occupation for the children, since their histories are fraught with sharp edges, illegal acts, and without socially acceptable moorings.

Peter's search for the meaning of time is part of his search for the meaning of life. His quest includes literature with which members of the ISST are familiar—Plato, Aristotle, Newton, Bergson, and von Uexkull. He learns about the history of time measurement. As this story unfolds in the late 1960's, the main character becomes aware of the findings of ISST in 1966 at the New York Academy of Sciences and its first meeting at Oberwolfach. His experiment in learning about time parallels his attempt to leave being a borderliner behind, to escape the repression he has experienced in Danish institutional life. He reads, among other works, Whitrow's Natural Philosophy of Time. The protagonist regards ISST members as insiders to established society, he, of course, being the consummate outsider.

As the story ends, Peter is redeemed by being able to live in a manner which he considers to be socially

acceptable. And so he comes to terms with the multiple aspects of time and, thereby, legitimizes his own past. He concludes that, "Time refuses to be simplified and reduced. You cannot say that it is found only in the mind or only in the universe, that it runs only in one direction, or in every one imaginable. That it exists only in biological substructure, or only a social convention. That it is only individual or only collective, only cyclic, only linear, relative, absolute, determined, universal or only local, only indeterminate, illusory, totally true, immeasurable, measurable, explicable, or unapproachable. It is all of these things." (p.259) (JFF)

Jackson, John Brinckerhoff. A Sense of Place, a Sense of Time. New Haven and London: Yale University Press. 1994. 205pp.

This book is a loose collection of essays covering various aspects of the contemporary man-made landscape. Topics ranging from mobile homes to vernacular gardens are richly treated with cross-cultural histories, sometimes reaching back to prehistoric and non-human beginnings. The thread connecting this far-ranging assortment of topics is the identification and interpretation of everyday symbols of our changing culture.

The title of the book, A Sense of Place, a Sense of Time, is taken from a short composition about, not a physical feature of space, but the cultural concept of time. The author gives the phrase, "a sense of place," a dynamic interpretation by arguing that contemporary usage is associated with a collective identity created by habit and custom. The idea is that activities repeated over a period of time result in a sense of being at home or having "a sense of place" in a town or city.

Jackson is not talking about the spiritual and aesthetic experiences belonging to environments with unusual qualities. Even though he gives poetic description to the strong, handsome beauty of landscapes in the desert Southwest—valleys and mountain ranges which breathe with the powerful presence of some guardianship or historic experience—Jackson's purpose is to focus on the relationship between everyday ritual and the creation of community.

From this perspective the author concludes that, not only are events more important than places and objects, but earlier ideas of place have become subordinated to a shared sense of time...leading inevitably to an increased awareness of time. Function completely eclipses form when roads lead to multiple destinations, indoor spaces have multiple uses, and outdoor environments are easily shaped and re-shaped by current market activities.



Jackson states that too much importance is attached to art and architecture in attempting to understand contemporary American culture because neither they, nor roads, nor any other constructed, man-made thing can, by themselves, be seen as symbolizing the collective identity. What can is still unclear. Jackson observes that we are in a transition period characterized by a fluid organization of space, left only with a hope that eventually man-made forms will again come to symbolize and explain who we are.

The delight of this book lies in seeing ourselves through mundane aspects and artifacts of our landscape which are not easily seen or often contemplated. The style is poetic and entertaining with digressions that are sometime elaborate but informative. The frustration of this book is finding no last words or summary insights beyond the postmodern recognition of the construction of reality. (VKJ)

Le Pan, D., The Cognitive Revolution in Western Culture, Volume I, The Birth of Expectation, Macmillan Press, 1989. 370 pp.

Don Le Pan must be an unusual man. From the vantage point of a field quite outside the realm of cognitive psychology he has come to the conclusion that the generally accepted anthropological canon concerning the thought of medieval as well as primitive peoples is seriously flawed. He holds that such thoughts cannot be explained, as is currently assumed, only in terms of content and without regard for the underlying cognitive processes at work. His immersion in medieval narrative led him to mark what he felt was a revolutionary change in the nature of cognitive processes ushered in by Shakespeare and to a lesser extent by Marlowe, a change that can only be accounted for by viewing it as a shift in the level of cognitive development. What took intellectual courage was to face prejudicial and even racist interpretations of his thesis. Aware of this he takes pains to point out that to accept differences in levels of cognitive development also means to accept the fact that "both wisdom and goodness can often be accompanied by an inability to perform certain logical operations" (p. 23). He makes it clear the line he is drawing is not a judgmental one nor one that has moral implications.

It all began when his immersion in medieval narrative led him to what at first seemed an absurd idea, namely, that for medieval people, the capacity to form 'expectations' was either dormant or undeveloped. His use of this term refers to "the ability to form specific notions as to what is likely to happen in a given situation.

The formation of such expectations rests on the operation of a variety of related cognitive processes..." (p. 75). The book is devoted to the identification and explication of these processes through a careful scrutiny of anthropological, historical, and literary sources. His conclusions, while focusing primarily on medieval thought, apply with considerable validity, though not always to the same degree, to the thought of primitives and, to small children at the pre-operational level as described by Piaget.

The key to the understanding the nature of cognitive limitations lies in the prevalence of a subjective orientation to the passage of time and the unawareness of the existence of an impersonal, objective, abstract temporal order independent of needs or desires. Past, present and future are linked together in a fuzzy unity. Causal thought becomes arbitrary with events described as self-contained sequential happenings showing little concern for time-based causal factors. Narrative accounts lack a clear sense of "whenness", "pastness", "meanwhile", and the concept of "simultaneity." Complicating this one-sided time sense is the failure to distinguish between the natural and the supernatural. The result is an undercurrent of prophetic determinism that prevents any objectively based expectations from coming into being. The elimination of future uncertainties simply eliminates any rational assessment of probabilities. Belief crowds out doubt.

The last third of the book is devoted to a detailed examination of narrative structure illustrative of the author's thesis drawn from accounts ranging from Beowulf up to and including an extended discussion of the development of Shakespeare's thought. Shakespearean drama ushered in an epoch that clearly differentiated earlier forms of thought from the modern era. Narrative changed from simple "and...then" sequences occurring in a causal vacuum to events linked to an external temporal standard. Complex plots in which multiple subplots depicting simultaneous events replaced simple plotting. Expectations come into full bloom with the dawn of the "artificial day." The cognitive revolution is complete. Causality and logical thought become a feature of daily life.

Coming at it obliquely, as he did, relying on the way people actually thought and lived rather than on laboratory data, I found his argument intriguing and compelling. I wonder what more he will bring to it in Volume 2. I look forward to the answer.

As an aside, this book is geared to an academic audience. Were his views more widely known, they would be a healthy antidote to the racist controversy



stirred up recently by The Bell Curve. (Richard J. Herrnstein and Charles Murray, Free Press, 1994) (MU)

Lestienne, Rémy, The Children of Time: Causality, Entropy, Becoming. Tr. by e. C. Neher. Urbana: University of Illinois Press, 1995. 220p.

Translation of the author's Le hasard créateur, reviewed in Time's News No. 14. (September, 1994). "A work of scientific substance and critical wisdom, developed in the urbane idiom of a French scholar." (From the jacket).

Lieb, Irwin C. Past, Present, and Future: a Philosophical Essay about Time. University of Illinois Press, 1991.

Time is real--indeed, it is a fundamental reality. So too is "individualness" or the fact of endlessly many entities--"singular", active, and contending with one another in the present; together and indistinguishable in the past; and awaiting their separation and definiteness in the future. With Time and Individuals Irwin Lieb attempts to show how the world is sustained and yet ever new. In doing so he has created a marvelously imaginative, deeply reasoned, and challenging essay.

Underlying this compelling theory of time is an almost Heraclitean vision of an everlasting world in which novelty, multiplicity, and change are necessary features. In an uncompromising attempt to take time and its parts (past, present, and future) seriously, this vision is wedded with the fundamental law of thought that nothing comes from nothing. This philosophical adventure is made all the more miraculous for its success without recourse to divine intervention. The activity of the present and the definiteness individuals come to attain are not imposed from without; instead, they are understood to arise from the ways time and being necessarily interact. The various interactions of time and individuals are themselves the past, the present, and the future.

Stated so starkly these themes are bound to sound very cryptic. But even in Lieb's meticulous exposition this reviewer (admittedly a non-specialist) had great difficulty in penetrating their abstractness. This is a book that must be read very carefully, in its entirety, and perhaps more than once. The effort to see the sense in these unfamiliar ideas is amply rewarded, and one is treated along the way to speculation on a variety of topics--discussions, for example, of history, the nature

of philosophical argument, regularity and laws of nature. Throughout the argument, leading ideas are developed in contrast to the strongest theories of time. Especially rewarding are Lieb's masterfully condensed and lucid analyses of these theories. (Most extensive are the treatments of Plato, Aristotle, Leibniz, and Whitehead).

The publishers suggest that Past, Present, and Future may be the "most important" theory of time since Process and Reality. Whether such an uncompromisingly original and densely argued metaphysical essay can have much effect in the current academic climate may be doubted, but there is good reason to think that readers who are seriously interested in time will have much to learn from this book and from the experience of coming to terms with it. The ideas presented here should be suggestive for a variety of fields, and Lieb has provided many hints for the direction such applications might take. (CFH)

Lyle, Emily. Archaic Cosmos. Polarity, Space and Time. Edinburgh: Polygon, 1990, 193 pp.

In this remarkably original book Emily Lyle is suggesting, undogmatically, that a single complex model may underlie the major polytheistic religions of the archaic Old World. Her thesis therefore concerns a fundamental worldview, that gestated within human prehistory, or 'primitive society', and was then elaborated, refined, and variously transformed in the different world religions, civilizations, and regional cultures. For example, the tripartite division of Indo-European society into priests, warriors, and cultivators (discovered by correspondences of pre-class society), which link the spheres of the sacred, physical force, and prosperity with heaven, atmosphere, and earth; with the head, the upper body, and the lower body; and with the colours white, red, and black.

A short review cannot do justice to the subtlety of this thesis. Its essence is the proposition that a series of correspondences between representations of Macrocosm, Mesocosm (human society), and Microcosm (the human body), are at the root of consciousness and culture, at least in the Old World. But side by side with this primordial categorization by three, is an equally primordial orientation in space, with polarities of right and left, front and behind. Lyle's contribution is an insight into how the triad is related to the etrad, through a fourth element that is the sum of the triad, for example: priests, warriors, cultivators, whole people; spring, summer, winter, whole year. She supplies much impressive evidence to show that the three functions of the triad

are personified as male gods, whilst the deity of the fourth element in the tetrad, which is simultaneously a synthesis of the triad, is a goddess.

On the vertical plane, there are three cosmic regions related to the gods of heaven, atmosphere, and netherworld. The goddess is related to the whole, as the world tree which connects the three, and also to a thin slice which is the earth's surface, later to become a central Earth at the centre of a spherical universe. In the yearly cycle, there are three seasons related to the three gods of spring, summer, and winter. The goddess is related to the year as a whole and is represented by a short period between summer and winter where autumn later emerged.

Especially fascinating in relation to time and mystery, is Lyle's interpretation of the twelve sacred days and nights at midwinter, sometimes identified as the Twelve Days of Christmas, through the intercalation of which the lunar year is kept in line with the solar year. This was a period for celebrating death, chaos, and reversal, while on each of the days it was possible to foretell events for each of the twelve months to come. (TC)

Morson, Gary Saul. Narrative and Freedom: The Shadows of Time. New Haven: Yale University Press, 1994. 331 pp. Index.

In Narrative and Freedom: The Shadows of Time Gary Saul Morson examines how the experience of open time can be (re)created in the novel. The central question addressed is: "If an author wants to represent freedom, can he escape the determinations of his own design and ending?" How we regard time effects all facets of our lives. Morson's extensive investigation into how questions of temporality effect literary structure and narrative extends well beyond literary criticism to embrace the social, historical, psychological, and ethical consequences of thinking about time.

Morson counters deterministic views with a conception of time he developed with Michael Andre Bernstein and which he calls *sideshadowing*. By shifting our focus from actualization to possibility, sideshadowing promotes our awareness of the indeterminacies that can be admitted into narrative. Significance is not confined to what actually transpired, but is accorded also to what *might* have occurred. As momentary "points" of actuality are replaced with fields of possibilities, the past regains its presentness and the future its productive uncertainty. We confront not a causal chain of dots, but complex "smudges" of potentiality that project a concept of open time and affirm the "essentially dynamic, creative,

and processual nature of human beings."

With sideshadowing Morson brings to literature a temporal approach that Stephen Jay Gould has insisted on in evolutionary biology, that Herbert Butterfield championed for history, that Henry James argued in his philosophy, that Mihail Bakhtin approached in his theoretical work, and that Tolstoy and Dostoevsky adopted in their search for the temporal pulse peculiar to novels. Morson's provocative readings of The Devils and Anna Karenina shows Tolstoy and Dostoevsky to be master practitioners of sideshadowing, but this concept is also fruitfully applied to works by writers as varied as Turgenev, Chekhov, Bulgakov, Cervantes, Trollope, Eliot, and Borges.

This study demonstrates the dramatic expansion of creative, intellectual, and ethical horizons that results when we overcome the strictures of inevitability. In championing open temporality Morson demonstrates that to remain neutral with respect to philosophies of time is to abet those forces that deny choice, individual responsibility, and human freedom. (OPH)

Nowotny, H., Time: The Modern and Postmodern Experience. Oxford: Polity Press, 1994. 179 pp. With a Foreword by J. T. Fraser.

"Had we but world enough and time!" Reading Shakespeare's line we know, of course, that the desire it expresses is not unique to the Renaissance. The conflict between the ultimately unalterable time limits of the individual and the apparent boundlessness of time and world--the great divide between lifetime and world time--seems to be one of the few natural, or even metaphysical, features of human existence. However, as Helga Nowotny sets out to show in her book, this is not the case. Time changes as our forms of life change. Yet although these changes have never before been so far-reaching as in the 20th century, the discursive exchange about time is underdeveloped. It is, Nowotny observes, as if language absorbs only with delay what social experience seeks to confide to it.

Exploring the transformations in Western societies in terms of modern and postmodern experience, Nowotny describes the inherent changes in the perception of time, in the sense of time and in the social and individual structuring of time. These changes, she argues, are of qualitative nature, that is to say they can only be understood in terms of the cultural and historical background of the modern and postmodern experience. What are these new temporal experiences? Many of them are correlated to modern "technologies of time"

such as electronic media of communication and infrastructure. The age, in which both linearity and the belief in progress as a sort of unstoppable teleological development were sustained by means of the time-structure of industrial production, has come to an end. In its wake the new technological organization of social (and private) life creates the real illusion of local and global simultaneity.

This is connected with the disappearance of the category of the future as a distance dimension of time. What used to be the time horizon of the future--a domain of the new and unexpected, of speculation and uncertainty--appears to be transformed into an extrapolation from the present. This "extended present" is the future now and the now is the future: a unified trajectory for various new configurations of time such as "accelerated innovation".

The more complex the society, the more complex (that is differentiated and stratified) the courses of time become. As a side-effect new economic and political forms of temporal conflict have emerged. A striking case in point is the structural "time pressure", "temporal overlapping" and "running out of time". Temporal intensification and diversification are other aspects of the same social dynamics.

Yet another new phenomenological Gestalt of time that Nowotny sensitively analyzes in several of its variants is the "longing for the moment". What exactly is the right moment? In a world of simultaneity this is all too often a matter of crucial importance for (economic, financial and political) transactions. But there is another, more individual, aspect of this "longing because the moment", for the meaningful definition of (as well as control over) time seems to be increasingly out of reach of the individual. Nowotny gives a discursive and social-scientific survey of how in our societies more and more people experience time as something threatening: as an external constraint, made by others and imposed on one's own time--on one's "proper time". Correspondingly, the desire for proper time and temporal autonomy has become a recurring theme in public and private discourse, revealing, as Nowotny argues, that time has become an object of fundamental social and personal conflicts in our everyday life.

In focusing on the rise of proper time, one's own time, the author organizes her account of this wide spectrum of new temporal phenomena emerging in the transition from traditional industrial societies (the basis for the "modern" experience) to societies which function along the electronic lines of global networks (the "post-modern" experience). In fact, *Eigenzeit* (proper time)--a term that stems from Relativity Theory, as J. T. Fraser

emphasizes in his foreword--is the original title of the book first published in German (1989); *Temps-a-soi* is the title of the French edition (1992).

Yet despite its focus on a "feeling of time", *Time: The Modern and Postmodern Experience* is the book of a sociologist. Its main theme is the dynamic between individual and social time and the fascinating historicity of this relationship. Epistemologically speaking, the author outlines the emergence of proper time as part of an archaeology of experiencing time, tracing back its roots to what historians call the "saddle period" of modernity 1750-1850 and to the emerging conflict in late Middle Ages between divine time and the time of the first bourgeois traders. Nowotny's central claim is that however natural and individual the experience of personal time might seem, it only takes on meaningful form as a symbolic product of human interaction. And as the technical, economical and cultural lines of these material and symbolic interactions change, so does the shape of time and our individual sense, idea and feeling of it.

A compelling point in Nowotny's account is that even the idea of "my time", that is the individual as site for the feeling of an own time, is itself an outcome of the cultural development from Modernity to post-Modernity. The advent of capitalism represented the first steps towards the recognition of a minimal proper time. While on the one hand business life and machines began to dictate new metronomic rhythms, on the other hand a distinct sphere of time emerged.

For the bourgeois individual, however, the emergence of individuality and subjectivity brought a separate sense of time. But the latter remained, as for the female reader of the novel, or for entries in the diary, which became the temporal organ of private feelings, still wholly embedded in the private sphere, withheld from the eyes of others, the secret time of the emergent self. (p.38)

Viewed in this light, proper time--like time in general--appears as a cultural construction that escapes the conceptual dichotomies of individual and society, of personal self and historical process, that are traditionally used in psychology, philosophy and social sciences. The notion of proper time makes it clear that there is no such thing as an individual's private time (private in the sense in which Wittgenstein criticized the idea of a "private language"). There is no merely personal or inner time as opposed to social or external time. Even at moments of distinctively individual feelings, time retains its relation to others; even the very modern temporality of the lonely is, in the end, merely a lack of jointly spent, shared time.



Nowotny's reflections cover a wide range of topics and disciplines in a most stimulating way, inviting one to think through many remarks made *en passant*. Despite its far-reaching theoretical claims, it is eloquently written—with a keen eye for colorful detail and telling anecdote. In its style and form the book follows its subject matter: time, the ubiquitous texture, which unites not only combatants and lovers but also all human sciences. It presents a portrayal of proper time in the wake of a tradition of sociology of culture which in similar manner draws upon statistics of economy and history of science as well as upon literature, art, media theory and discourse analysis. I am sure the book will appeal to a wide range of readers—but in particular, of course, to the growing number of students of time, history and the individual. (JB)

Pfusterschmid-Hardtenstein, Heinrich, ed. Zeit und Wahrheit [Time and Truth]. Vienna: Ibra, 1995. 651pp.

This substantial volume documents the 1994 meeting of the European Forum at Alpbach, Austria, which marked the 50th anniversary of this yearly event. The intellectual forum, instituted after the Second World War with a focus on Austria, quickly expanded its scope to combine political, economic, and philosophical inquiries into European issues, which are addressed each summer by an impressive group of—mostly European—politicians, scholars, and other figures of public life. Fittingly enough, the volume opens with reminiscences from those who have participated in or followed the Forum closely for many years. In a very readable "Introduction to the general subject", J. R. Lucas forges connections between the two concepts: "Truth is invariant over person and time, but not independent of them or disconnected from them" (37).

It is impossible to as much as list the almost 90 contributions (a number of them in English, the majority in German) assembled in this volume under more than a dozen headings such as "Conversations on technology: Infrastructure for a Common Europe", "Science and defense politics", "On the relativity of morality and law", and "Challenges of integration and free trade". But in keeping with the theme of "Time and Truth", a number of sections and presentations address the topic of time. One of the speakers was ISST founder J.T. Fraser, who addressed the conference theme in a presentation on "Truth as a recognition of permanence: An interdisciplinary critique", which ranges from etymology through science to philosophy. In a panel on "Eigenzeit

und Synchronization" introduced and chaired by Helga Nowotny, Gernot Eder sums up "physical aspects of proper time and synchronization", Ernst Pöppel contributes an essay on the neuro- and psychophysiology of time perception, and noted historian Reinhart Koselleck extends his work on concepts of time in history and historiography to "layers of time" as yet another way of approaching the complexity of his subject. Two other contributions on time and history are directed more towards theology: Patrick Bahner's "Generatio praeterit, et generatio advenit: Zeit und Wahrheit in Rankes Papstgeschichte" and Ernst Topitsch on "Time and illusion". "Portraits" are devoted to Albert Einstein ("The essential unity of science and philosophy", by Elie Zahar) and sociologist Norbert Elias, by Peter Gleichmann. The latter barely mentions Elias' work on time, focusing instead on the general question whether his work can be made productive as a means of orientation for contemporary societies in European states. Further more, a number of "seminars" include discussions of time (and truth) in a variety of fields, among them evolutionary biology, economics and politics, religion and theology, culture and aesthetics, and the media. Other contributions focus on rationality and cognitive realism, the evolution of the universe, postmodernism in literature, and on time in industrial societies. While the focus is by no means exclusively on aspects of time, this volume is interesting, not the least, in the scope and diversity of what it offers: it creates new connections and offers broad perspectives as well as excellent individual contributions. (SG)

Rice, Paul. Timesource, 10 Speed Press, Berkeley, California.

Subtitled "a handy compendium of facts and uses," Timesource is a smorgasbord of short articles and facts related to time, some directly, some tangentially. There is a heavy emphasis on time viewed from the perspective of business organizations, as in corporate time management, although the range of topics includes a short history of calendars, clocks, electronic time, leisure time, sleep time, aging, time etymology, and time (more accurately watch and clock) museums. It starts with a glossary of categories of time that corresponds (with some different names) to J. T. Fraser's hierarchical levels of time, but little is done to make use of the categories in what follows. There are interesting facts



(and time related marginal quotations) throughout, but no overall framework to unite them.

(MHA)

Seidler, G. H.: Der Blick des Anderen. Eine Analyse der Scham. Verlag Internationale Psychoanalyse, Stuttgart, 1995. (To be Seen by Another: the Psychoanalysis of Shame) In German.

The author presents a large-scale study of the emotion of shame. Starting out from a phenomenological orientation he develops a three-level model according to his understanding with a different structuring of consciousness, intentionality and reflexivity. Taking up psychoanalytical positions, he develops a new theory, the "theory of alterity" ("theory of otherness"), which makes the conceptualization of interpersonal and intrapersonal interacting relations possible.

Unlike Kant, who takes the uniqueness of time for granted in his definition of time in Kritik der reinen Vernunft, Seidler assumes that there are different dimensions of experiencing time. Two of these dimensions shall be particularly mentioned here: There is an "illusionary time of wish fulfillment", and a "social time" shared with other individuals. The course of the first-mentioned is determined by other laws and rules than social time; there is no *tertium comparationis*, no standard, no outside criterion. This standard is established in the encounter with the other's reality, who sets his strangeness against the subject's intentionality determined by his wish. The subject is then thrown back on himself; he is reflected and becomes aware of himself. With the entry of the other, the stranger, into his illusionary world of expectation, the subject is hurled out of his illusionary time of wish fulfillment and comes into contact with the time shared with others, the "social time". Seidler brings out very clearly that this contact with the other is to be considered a preliminary stage of the experience of death. He strongly follows Sartre in his representation, whose approach he broadens by that of interacting relations. Seidler criticizes conventional psychoanalytical concepts for internalization with reference to their reifying character. By including the concept of the "objective self-consciousness" by M. Lewis, he suggests speaking of "symbolization" instead of "internalization". Processes of symbolization are stimulated by the encounter with the other, the stranger. Thus, Seidler arrives through his analysis of shame at the developing of an interrelation between shame, self-consciousness, symbolization and the structural formation of the soul.

(THS)

Smoot, George and Davidson, Keay, Wrinkles in Time. (Avon Books, New York, 1993), 331 p.

Wrinkles in Time is an astrophysicist's story of science in search of evidence of the origins of the universe. It recapitulates major scientific world views, from Ptolemy through Einstein and beyond, culminating in the 1992 announcement that physicists working on a project called Cosmic Background Explorer (COBE) had found cosmic radiation from near (300,000 out of 15 billion years) the birth of the universe, which reinforced the "big bang" theory as it has been modified in recent years by "inflation" theory. A strength of the book is not only scientific explanation, but the personalizing of the discovery into a story of (not just intellectual) adventure. Real science is shown as having become interwoven with the limits of scientific measuring devices and the private and public bureaucracies through which one must now work, given the size and scope of the measuring devices, to do science.

George Smoot, one of the principal investigators on the COBE project (in which measuring devices were launched into orbit by a NASA rocket to escape measurement distortions caused by the earth's atmosphere and other sources) and Keay Davidson, a science writer, move the story along. Theoretical scientific building blocks accumulate, to be called into question as other observations and measurements are made. Astronomical observation and particle physics, macro and micro, come together and diverge, and, at least in the book, come together again, providing a coherent explanation of the universe.

If the universe is static, infinite, and uniform, and the number of stars infinite and uniformly distributed, there is a problem: the sky at night should not be dark. The stars should cover every part of the night sky, and glow like a fireball, incinerating us. A nineteenth-century writer wondered about this problem, which dates from Kepler (1571-1630), and has come to be known as Olbers paradox. The French astronomer Laplace (1749-1827) hypothesized that the solar system evolved from a primordial cloud of gas and dust. The writer, familiar with Laplace, wrote an essay explaining the dark night sky: the distance from the invisible background is so immense that some light has not reached us. The explanation anticipated "big bang" theory--the universe is not infinitely old, but had a beginning. The writer thought this his most important work, but it received scant attention. His name: Edgar Allen Poe (1809-1849). We should not be surprised--the raven, even if it did not speak of lost love, did speak of time.

The dark night sky is the first of several building blocks. The second is the composition and distribution of the elements in the universe. Subatomic physics could explain the elements, through nuclear fusion, given a sufficiently superheated initial source (such as a concentration at one point in space/time) and subsequent cooling, but present stars are not hot enough to fuse the lighter elements into an abundance of heavier ones. A third building block is the expansion, by assuming red shifts were due to the Doppler effect, to establish that there were distant galaxies beyond our own (the universe was far bigger than imagined) and that it was expanding. His work convinced Einstein, who had until then preferred to believe the universe was static.

Lemaitre, a Belgian priest educated at Cambridge and Harvard outlined the earliest version of the big bang theory, based upon a "primordial atom," between 1927 and 1933. (An opponent of the theory, Houle, coined the then-derisive term "big bang" in the 1950s). An important fourth building block was discovered in 1964, when cosmic background radiation, believed to be from the initial big-bang-explosion, was detected. Blackbody radiation occurs when particles collide with each other very rapidly in thermal equilibrium. Given the intensity of the collisions, a huge flux of radiation would have been produced early, occurring everywhere simultaneously. Its afterglow should be uniform, existing everywhere across the heavens, as was found to be the case in 1964.

Observation, however, created other problems, some of which led astronomers to question whether the laws of physics could be relied upon at all. Particle physicists had found that "antimatter" was necessary to explain the creation of matter from energy. Other observations showed that galaxies are not only expanding, but are moving through space at a tremendous speed relative to the cosmic background radiation. This means, if the laws of gravity apply, that there has to be much more massive concentrations of matter in the universe than have previously been contemplated. The stars and galaxies, scientists concluded, and all of the physical world visible to our eyes and normal experience, may constitute less than 1% of the stuff of creation, and "dark matters" a much greater proportion of it. The universe, it had become clear, contained large, very heterogeneous, clusters of matter--galaxies, superclusters, and other massive structures. This conflicted with the pervasive homogeneity, i.e., even distribution of matter, in the early universe, as detected in cosmic background radiation. There was no way to account for the staggering heterogeneity unless "wrinkles" could be detected in the early uniformity. "Inflation theory," drawing from

astrophysics (the very large) and particle physics (the very small) provided the hypothesis: there was a very rapid, very brief, big bang within the big bang, in the first instant of creation, that set the stage for the later evolution of structured matter. If this happened, however, it should be possible to detect the "wrinkles" in the fabric of space/time dating from about 300,000 years after the big bang, when matter and radiation decoupled, freeing ordinary matter to be attracted to the structures formed by dark matter. The COBE experiment found the wrinkles, keeping alive the hope that laws of physics will eventually be able to explain the universe.

Galileo and Newton showed terrestrial and celestial physics to be consistent. Inflation theory hypothesizes that astrophysics and particle physics are consistent. Smoot credits the COBE experiment, by finding evidence of structural formation consistent with laws of gravity, with salvaging the "big bang theory at a time when detractors were attacking in increasing numbers." Since the book was written, the Hubble Space Telescope has found other evidence--of chaotic formations from the early universe with no counterpart in today's (that is, the closer/younger) universe; and evidence that the universe, based upon the measured rate of expansion, is 8 to 12 billion years old rather than the 15+ billion previously thought.

The picture that is developing is of a chaotic, or a temporal, world at the "inside" of particle physics and at the "beginning" of astrophysics, where laws of physics no longer rule, but rather (begin to) emerge, and where theory must be adjusted to account for temporal inconsistencies (stars calculated to be older than the Hubble telescope's indication of the age of the universe). This suggests that physics will now confront more directly the problem of time--theory has tended to conflate time and space, but then reintroduce time as a causal ordering principle (calling it evolution). Quoth the (new) raven: Evermore. Quoth George Smoot, "There is a clear order to the evolution of the universe, moving from simplicity and symmetry to greater complexity and structure" (p. 296). (MHA)

**TEMPORALISTES** Lettre transdisciplinaire de liaison entre chercheurs attachés à l'étude des temps en sciences humaines. #30, Juillet, 1995.

Temps et mode de vie/Modes de vie et rapports sociaux de sexe: jeux et enjeux de l'analyse sociologique/Pratique coopérative et gestation du temps chez des couples d'agriculteurs/Approche psycho-sociale des modes de vie et des projets de jeunes en attente d'emploi.

Zbigniew Zaleski (Ed.), Psychology of Future Orientation. Lublin, Poland: Towarzystwo Naukowe KUL, 1994. 232 pp. \$20.00 paperback

People naturally parcel their temporal experiences into three categories--past, present, and future. These divisions of the "arrow of time" arise partly from the structures and functioning of the brain and from the perceptual, memory, and cognitive processes they subserve. Social and cultural influences, such as parental values, education, and religion, greatly modify the relative emphases that any person places on the three temporal zones. People thereby vary considerably in their temporal orientations, just as a single individual's behavior varies in its situational emphasis on past, present, and future. One's momentary time perspective usually reflects a mixture of emphases on the three zones, each zone being relatively constricted or expanded. Although Psychology of Future Orientation focuses mainly on one zone, the contributors to this edited volume necessarily also discuss the others. The authors review and present psychological evidence on future orientation, but they also draw on theories and perspectives from other disciplines. Cognitive scientists, social scientists, and humanists, such as sociologists, political scientists, social anthropologists, and natural philosophers, will find most of the chapters to be interesting and valuable.

Several contributors discuss the origins of research on future orientation. Zaleski traces the inspiration to Guyau's (1890) La genèse de l'idée du temps. Nurmi emphasizes early social psychological work of Israeli in the early 1930s and Lewin in the 1940s, among others. More recent works enlighten several contributors, including Nuttin and Lens's (1985) seminal book, Future Time Perspective and Motivation: Theory and Research Method, and Pervin's (1989) Goal Concepts in Personality and Social Psychology.

The present volume, however, is the most comprehensive and recent review of theory and research on the psychology of future orientation. We enjoyed reading nearly all of the chapters. Although we were occasionally annoyed by some sexist language, typographic errors, and the absence of subject and author indexes, these minor criticisms do not dampen our overall enthusiasm.

The contributors are from eight countries and four continents, so it is not surprising that Psychology of Future Orientation offers many cross-cultural insights. For example, Zaleski et al. examine how people from several countries view world problems. Trommsdorff reviews research on future orientation of East and West Berliners, as well as Jewish and Arab adolescents. Only

eastern Asia is neglected. It would have been interesting to compare the future orientation of individuals living in more collectivistic cultures with those in more individualistic cultures. Further, Agarwal's recent research on future orientation in India and its relationship with temporal coding in memory would have made an interesting addition to the volume.

Many contributors explore how environmental circumstances other than culture influence individual differences in future orientation. These include discussions by Locke and by Trommsdorff on citizens in socialist and capitalist countries, Nurmi on the old and the young, Bouffard et al. on the rich and the poor, and Feather and Bond on the employed and the unemployed. We were surprised that only one contributor discusses early childhood experiences and the development of future orientation: Trommsdorff does this quite well, but also notes that there are few systematic studies on this major developmental attainment.

The volume includes a fairly balanced mix of review chapters and empirical chapters. Authors of the review chapters discuss many ways to measure future orientation and related individual differences in goals and expectations. Authors of the empirical articles report data that they have collected using these methods. The number and variety of instruments they used to assess future orientation attests to the formative nature of this research area, as well as its diversity. Various authors discuss about a dozen measures, nearly all of which are questionnaires. We were particularly impressed by Klinger's and Strathman et al.'s chapters, because both incorporate a variety of outcome measures to validate their work. Klinger estimates, based on thought-sampling research, that 12% of daily thoughts focus on future events. He also discusses how a measure of current concerns relates to the frequency of different types of thoughts and even to dream contents. Strathman et al. demonstrate how concerns for future consequences differentially predict beliefs about environmental issues, vice-presidential candidates, and social activism.

Several chapters concern relationships between future time perspective and psychological well-being. Some authors laud the benefits of having an extended future time perspective and well-defined goals, but only Zaleski mentions a negative side: future anxiety. Several contributors focus heavily on extrinsic goals, such as financial success and status, but do not seem to acknowledge a potential adverse effect. Recent evidence shows that if extrinsic goals are central to a person's identity, well-being decreases. Several authors allude to intervention strategies, and Zaleski provides an account of hope, helplessness, and anxiety that suggests potential



applications. Research is simply too incomplete, however, to suggest how to emphasize or lengthen a person's future orientation or to change his or her goals.

Contributors also review several constructs related to future orientation, such as individual goals, plans, and expectations. Several chapters range more broadly, including work on optimism and pessimism, self-efficacy, attributions, and action and control systems. Have you ever wondered about the meaning of *hope*? Zaleski presents a previously unpublished analysis of people's concepts of hope, along with similar and opposing concepts, performed by his colleague at the University of Lublin.

Most authors provide penetrating reviews, interesting new data, or both. Locke's theoretical chapter is an exception. We wondered why it was included: It focuses marginally on the psychology of future orientation and does not relate much to the other chapters. Locke uses living-systems theory to explain economic behavior, discusses Ayn Rand's objectivist philosophy, and mentions his own theories. When he compares capitalism and socialism, the essay falters. These comparisons lack supporting evidence, adopt the view of a capitalistic high-level manager, and seem to involve democracy and fascism instead of capitalism and socialism *per se*. Nevertheless, it is a reflection of the times that a book published in post-communist Poland contains a chapter praising the virtues of capitalism and criticizing the inadequacies of socialism.

Nurmi asserts that "orientation to the future is a complex, multidimensional and multistage phenomenon" (p. 64). Nothing illustrates this better than Zaleski's discussion of the changes that swept his home country, Poland. He starts with the premise that Poland's communist rulers did not satisfy the hopes and goals of the people. As a result, citizens' perspectives clashed with those of the totalitarian politicians. Zaleski suggests that future orientation was the critical impetus which helped the Polish people free themselves: "Faith in the victory of justice and hope of installing democracy helped political dissidents in the 'SOLIDARITY' movement in Poland" to create "one of the biggest revolutions in human history--nonviolent victory of freedom over the violent communist system" (p. 19). Clearly, *Psychology of Future Orientation* is not about Poland or the demise of the Soviet Union. The coverage ranges widely on how future orientation impacts people's lives. Although the contributors simplify or subdivide the topic in various ways, the result is a delightfully complex and intricate view on this important aspect of human personality. (RAB and TK)

Note: This book may not be easily available, because there is no U.S. distributor. Contact Professor Zaleski (zzaleski@plumcs11.umcs.lublin.pl).

## TIME & SOCIETY

*An International Interdisciplinary Journal*

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## FUTURES

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**FROM THE EDITOR...**

Thanks to the world of cyberspace and the efforts of Tom Weissert we are now on-line and talking. The exchange is lively and thought-provoking, and although not as ephemeral as spoken discourse, still disappears from my reader with the click of a mouse. Therefore, for the record and before we all forget: the first note came from Carol Green telling us of her book and asking for quotations about time; the first extended discussion was started by Paul Harris, whose question about the properties of "chaotic time" provoked a wide range of responses dealing with cause and effect in non-linear systems, the distinction between time and its contents, time as the process of unfolding events, time as an ordering principle, chaos and the atemporal in Fraser's hierarchy, absolute chaos as it feeds through all higher temporal levels, the use of time to trace an attractor in phase space, the direction of time (forward and/or backward) and human experience, and the notion of "long" and/or "wide" time. In future editions of the newsletter we anticipate a column that will give a brief synopsis of the discussion that occurs.

Other news...In the near future you will receive an extensive questionnaire about the conference in St. Adele. A short questionnaire was distributed at the conference site. The President's Column reviews the reactions from a sampling of 34 respondents.

We are now beginning the process of preparing Vol. 9 in *The Study of Time* series. The editors of *The Study of Time*, Vol. 9 are pleased to announce that the complement of papers is now in hand and is being sent out to reviewers. This puts us well ahead of schedule compared to the last volume.

The Study of Time, Vol. 8 contains 24 refereed papers from the 44 that were delivered in Cerisy. The publication date is Nov. 23, 1995 and can be ordered by ISST Members for a 20% discount. Also consider ordering *The Study of Time* for your University's library.  
M. P. Soulsby

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*The Study of Time VIII*

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**MEMBER'S NEWS**

Paul Harris is setting up a library of papers by ISST members who wish to share their work. Members may send any papers they wish to him (address below). A running bibliography will be compiled and kept on the ISST electronic discussion group. Members can contact Paul and request a copy of specific papers; he will send them out accordingly.

Mail to: Dr. Paul Harris, Dept. of English  
Loyola Marymount University  
7900 Loyola Blvd  
Los Angeles, CA 90045

**CONFERENCE ANNOUNCEMENT**  
**TIME-ECOLOGY**  
**MAY 1-5, 1996**

The International Conference on Time-Ecology will be held at the Evangelische Akademie Tutzing in Lake Starnberg, Southern Bavaria. Topics deal with the relevance of time research in ecological issues. J. T. Fraser will open the conference by talking about life, death, ecology and the significance of the interdisciplinary study of time. Helga Nowotny is also on the program and Barbara Adam is a member of the planning committee for the series of conferences on the topic of time-ecology. Anyone seeking information should contact:

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