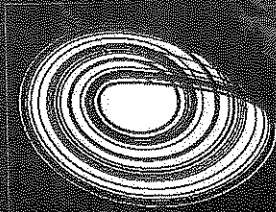# Society for Chaos Theory in Psychology & Life Sciences

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NEWSLETTER

VOL. 17, No. 1
OCTOBER 2009

SCTPLS 2010 Conference Host: Texas State University

Our 20th Annual Conference Will Head to San Marcos!

July 22-24, 2010 – Save the dates!

Texas State's main campus welcomes us to San Marcos, which lies about halfway between Austin and San Antonio. On the edge of the Texas Hill Country, where black land prairies roll into beautiful hills, Texas State enjoys a unique setting. The beauty of the crystal-clear San Marcos River and the stately cypress and pecan trees add to the charm of TSU. Settled on the banks of the San Marcos River, it offers year-round recreational activities. (http://www.txstate.edu/about/index.html)

San Marcos is the gateway to the Texas Hill Country, The spring-fed San Marcos River is a playground for swimming, canoeing, tubing—and riding glass bottom boats at its Aquarena Center. It is also home to the Wonder World Park, known as the "first show cave" in Texas. Since 105 years ago, people have toured the Balcones Fault Line Cave, and the theme park grew up around that attraction. http://www.ci.san-marcos.tx.us/tourism/
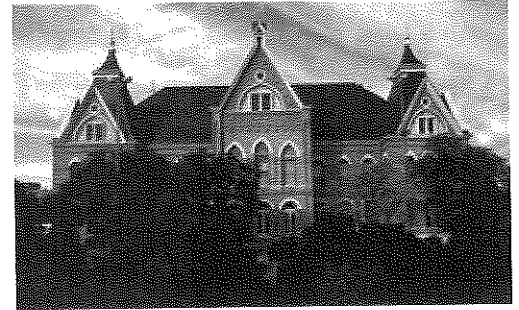
The 1903 red-roofed, castle-like landmark called Old Main was Texas State's first building. (http://www.txstate.edu/about/index.html)

The San Marcos Springs that feed the sparkling clear river are one of the greatest outflows from the Edwards Aquifer. More than 200 springs burst forth from three large fissures and many smaller openings. Early travelers and settlers described the large ones as fountains, gushing water several feet above the surface of the stream they created. Today, the Springs lie at the bottom of Spring Lake and are viewed through the floor of glass-bottomed boats. The Springs and the short 3.8 mile San Marcos River below them have been designated as critical habitat for five endangered species, including the Fountain Darter, the Texas Blind Salamander, the San Marcos Salamander, the San Marcos gambusia, and Texas Wild Rice. (http://www.edwardsaquifer.net/sanmarcos.html)

Unique museums are another San Marcos attraction. The LBJ Museum focuses on the college years of the 36th US President Lyndon Johnson and his life and shaping at the later-named Texas State University. The University's Alkek Library's Wittliff Writers Collection and Gallery of Southwestern and Mexican Photography include diverse other artifacts and bring the history of the US southwest alive. And finally, there's the new Dick's Classic Garage museum, which had its grand opening just this last July 2009. It's the brainchild of the Central Texas Museum of Automotive History.

2009 Annual Business Meeting Reporting

Minutes of SCTPLS Business Meeting
July 25, 2009

The meeting was conducted over lunch at the close of the conference.

Conference Debriefing

Positive comments about how wonderful it was, food was great, enjoyable cash bar, before the one evening speaker, well organized, and appreciated both keynote speakers. Feedback from participants to conference committee included forms for rating session presenters and the conference itself, which could be optional form provided in conference packet. This could also be used to collect suggestions for the next year's pre-conference workshops. Also suggested snacks with the first evening cash bar, perhaps attract more to the conference kickoff. Adhil Patel will lead an ad hoc committee to design the new conference feedback form, with help from Steve Thompson.

One question was how to monitor time when papers end at different times, making it hard to move from one session to another. It would help to have schedule show

start-stop times for each presenter within a session. Related to that was a recommendation to have session moderators to introduce presenters, monitor time, and handle the Q & A time at end. One person suggested having more thematic tracks, reduce the variety within sessions. Another suggested using a blog to rate presentations and schedule them at the same time to minimize conflicts between popular sessions.

The longer (half day) pre-conference workshops were appreciated because it "is nice to have longer time to spend with material – don't take them away!"

Conversation moved to promotional ideas to reach a wider audience, e.g., to use a blog and webinars, have online forum and bulletin board searchability, such features being subscriber-driven.

Committee Reports

Treasurer's Report. Steve Guastello reported highlights from the written Treasurer's Report on the April 1 – March 31 fiscal year. Full report published below.

Nominations for President. Candidates were nominated and seconded, and the ballot of three was unanimously approved. The nominees are Dick Thompson, Steven Albert Dietz, and Terrill Frantz.

Publications Committee. The report was read and is published below.

Other Committee-related Discussion

INSC. Scheduled for March 15-17, 2010 with University of Palermo in Palermo. Adhil suggested considering South Africa for a future INSC conference location. Rao Pipalla suggested SCTPLS consider having regional conferences.

Education Committee. No committee report at this time. Jayne Fleener, new chair, was unable to attend. Ideas to pass along to the committee included: make things visual on website to help get concepts across, attract the young. Consider a micro conference, Society put its stamp on it with attracting existing groups and grad students. Consider franchising small local conferences to educate and spread ideas. Consider one-day seminars we could lead and/or support, local chapters, connect SCTPLS with local chapters of other groups. Local endorsements of events to get SCTPLS out there. Start issuing dissertation awards.

Marketing/Membership Committee. Adhil Patel and Kyle Findlay will co-chair a new combined committee to coordinate marketing and membership. Formerly, the membership committee was separate. Constance Porter moved to appoint Adhil and Kyle to this position, Sara Ross seconded; all present were unanimously in favor. Meg Spohn had suggestions for this committee to explore, in re using latest internet methods to disseminate Society news and promote membership. She joined the committee.

New Business. For 2010 conference, build up the content on the second day to encourage people to attend full conference. Dates for Austin, Texas in 2010 will be nailed down soon after this meeting.

Adjournment. Motion was made and seconded to adjourn, Unanimously agreed and adjourned.

Submitted by: Sara Nora Ross
SCTPLS Secretary

Treasurer's Report

This report summarizes the financial results for the Society for the fiscal year 2008 ending 31 March, 2009. The final net for this year was $1027 after applying allocations that were encumbered from the previous year and applying encumbrances for next year. SCTPLS has been running at a modest surplus consistently since June 1994.

Table 1. Financial results for FY 2008.

Project	Net income
A. 2008 Conference in Richmond	$2876
B. Deposit on 2009 Conference in Milwaukee	0
C. INSC conference	0
D. Membership fees, including encumbered amount from FY07, institutional subscriptions, book sales, minus expenses	833
E. Donations to special funds	100
F. Advertising	(330)
G1. Royalties, permissions, special sales	300
G2. Book production	(1227)
H. Interest on accounts	3498
I. General finance and accounting office	(2000)
J. Other encumbrances from FY07	6700
Net before encumbrances	$10,750
K. Donations to special funds (same as E)	(100)
L. Membership fees for 2009-10 and later years received before 4-1-09	(4108)
M. 2009 Conference expense allocation	(5000)
N. 2009 Conf revenue received before 4-1-09	(515)
Final net	**$1027**

The two main areas of financial operation were the annual conference in Richmond VA (Line A, Table 1) and the membership-journal activities (Line D). A positive net was recorded for both areas, after applying the encumbered amount for pre-paid memberships from last year. The total attendance at the 2008 annual

conference in Richmond 2008 was 45, which was down substantially compared to 1996-2007. SCTPLS does not fund travel expenses for the Executive Committee members to the annual conference. There was no INSC this year, but one is planned for 2010.

Line D contains receipts from membership fees, institutional subscriptions to *NDPLS*, individual book sales, minus expenses to produce the journal and *Newsletter*, produce the annual art poster, purchase books that are resold at the annual conference, and related membership operations. Our membership currently stands at 230 active members as of September 30, 2009. The institutional subscription level for 2009 increased to 41 subscriptions, which was an uptick of 2.5%. Institutional prices for 2010 will not change compared to 2009.

Line E: The Society established two special funds in April 2004. The Student Scholarship Fund provides for waivers of conference registration fees for student members who have a technical presentation accepted for the annual conference. The International Hardship Fund provides for reductions in conference registration fees for members who have a technical presentation accepted for the annual conference and who have made a reasonable claim for hardship; travel from a currency-impaired country is the primary example of hardship addressed by the fund program. Other than the qualifications described above, applicants are given awards on a first-come first-served basis to the extent that resources allow. The two funds are maintained by contributions from members. Disbursements are reflected as a lessened amount in Line A. The total balance of the two funds was $85 after the 2008 conference. Additional donations were received during the year, and total balance of the two funds was $185 at the end of FY 2008 for use in the 2009 conference. The funds will be expended at the end of the 2009 conference.

SCTPLS has a new income source that is composed of royalties from its sponsored book, *Chaos and Complexity in Psychology*, permission fees associated with NDPLS articles and its web material, and sales of single articles in PDF format from NDPLS.

SCTPLS has no outstanding debts in the form of bank or other loans, bonds, or accounts payable in excess of 60 days.

Submitted by:
Stephen Guastello
SCTPLS Treasurer and CFO

Publications Committee Report

The members of the committee are Terrill Frantz, David Pincus, Matthijs Koopmans (ex-officio), and Stephen Guastello (Chair). The committee's purview includes the business of Nonlinear Dynamics, Psychology, and Life Sciences (beyond the purview of the editorial board), the SCTPLS Newsletter (beyond the purview of the Executive Committee), the web site, and miscellaneous publication activities.

NDPLS

The featured artist for the journal covers is Daniel Della-Bosca, from Griffith University in Australia. The featured artist for 2010 is Rob Harle, also from Australia.

The journal published special issues on *Psychomotor Coordination and Control*, and *The Impact of Edward Lorenz* in 2009. The Editorial Board plans to publish special issues on Education and Medical Practice in 2010. The Call for Papers for the latter was released in July.

Institutional subscriptions now stand at 41, up 1 since last year.

NDPLS is now indexed in *MathSciNet*, which is produced by the American Mathematical Association. We were accepted for inclusion in *Index Copernicus* but opted to be removed. Details of this decision appear below.

Single article sales have had a slow but promising flow during the year. The fair use statement that appears on the web site appears below.

The 2009 Citation Report for citations accumulated by the journal 2004-2008 is published on the web site and appears below. The Impact Factor is 1.871. The report appears below with additional commentary.

Tullio Minelli and Tonu Puu retired from the Editorial Board this year. We thank them for many years of guidance and enlightenment.

NEWSLETTER

The Newsletter is always looking for new feature articles from the members. Sara Ross (the Newsletter editor) is also looking for images made by SCTPLS articles that can be used on the covers of the Newsletter.

WEBSITE

New items were added to "Resources" page in the fall, 2008. We are continuing to include new materials. Members are encouraged to browse what is there already and contribute new tutorials, software links and instructions, videos, and other related material.

Abstracts to the 2008 conference are now available on the web, and they are also abstracted in PsycEXTRA (APA). This process will continue for future conferences.

A new blog is being organized and it should be ready to go public very soon. It is designed to feature articles written by members. The general web community is invited to post comments. One intention of the project is to develop some synergy between blog discussions and

new features for the Newsletter. Members who would like to contribute an article should send their material to David Pincus, the Blog Editor (pincus@chapman.edu), who can provide the next instructions. Comments are moderated and filtered to eliminate off-topic material and advertisements.

BOOKS

Chaos and Complexity in Psychology (edited by Stephen J. Guastello, Matthijs Koopmans, and David Pincus) was published by Cambridge University Press in late October, 2008. SCTPLS receives all royalties from this venture.

The Society has become involved in another new book project, *Nonlinear Dynamical Systems Analysis for the Behavioral Sciences Using Real Data* (edited by Stephen J. Guastello & Robert A. M. Gregson) is now under contract with CRC Press, div. Taylor and Francis. Some of the chapters will be articles reprinted from NDPLS. SCTPLS will receive one-third of the royalties.

Index Copernicus

In the summer of 2008 the Editorial Board made contact with Index Copernicus at the suggestion of one of our members and authors. At the time IC was a project of the Polish Ministry of Science with the objective of providing general content information and quality ratings for journals published mostly in Eastern European countries, or journals in which Polish authors have published. When we received the response inviting us to submit materials, we learned that IC was reorganized as a commercial venture with the intention of cataloging and rating all the journals in the world. Beginning in 2009 they were selling advertising to the publishers.

We submitted our materials and we were accepted for inclusion. We soon found out that the quality ratings, which are made on a 1-100 scale, put a strong priority on articles that are structured as research reports, the sheer quantity of research reports published, and the journals' circulation. It also discounted special issues on the premise that they were not adequately reviewed. The Editorial Board objected and withdrew from the system. Although the IC system might have been effective at distinguishing academic research journals from other media with scientific content, the Board regarded the system as generally biased toward large journals published by the large publishing corporations, biased toward popular and less specialized topics, and biased against theoretical and methodological articles which are structured differently. All articles appearing in *NDPLS* special issues are reviewed with the same integrity as those appearing in its regular issues; the only difference is the concentration of topics.

Fair-use Policy for Electronic Media

The editorial board of *Nonlinear Dynamics, Psychology, and Life Science* (NDPLS) as well as its sponsoring organization, the Society for Chaos Theory in Psychology and Life Sciences (SCTPLS), supports the dissemination of scientific research results and relevant theoretical principles. At the same time, the intellectual property of NDPLS, its authors, and its subscribers must be protected. The following policy guidelines are intended to establish fair-use practices for electronic resources copyrighted by SCTPLS that may be used by authors and other interested parties in maintaining protections against unfair or illegal distributions of copyrighted materials, while still allowing for the most efficient dissemination possible of information contained within those materials.

Neither authors nor those in possession of NDPLS content, including but not limited to complete or partial versions of published articles therein, may post a copy of final manuscript content either as a word processing, PDF, or other type file, on their Web site or their employer's server after it is accepted for publication. Such postings represent free and uncontrolled access to copyrighted journal content, and will be considered violations of legal transfer of copyright made by author(s) at the time of original publication.

Instead, it is permissible to post links to original journal content which may be acquired by others following relevant per article or subscription fees from the publishers of NDPLS, either through web or other legitimate means of transfer (i.e., posting a link to the journal's web-site is permissible). Authors or legitimate consumers (those who have purchased content directly from NDPLS through subscription or single article options) may share articles in full or part on a case-by-case basis (non-automated or free to public downloads) so long as such exchanges are clearly for the purpose of furthering non-profit research or educational objectives. All other forms of distribution require permission of SCTPLS, and fees for re-publication could be required. Unauthorized distributions will be considered to be violations of copyright, and will be subject to applicable legal penalties, whether criminal or civil. The following examples are intended to provide a non-exhaustive set of electronic or print sharing situations that are most likely to be encountered by authors or consumers of NDPLS content:

Distributions to students. Permitted use: Providing an article to students registered for a specific course in an accredited university as a supplement to course content Not permitted: Providing an article to students not registered in a course covering relevant content (and not covered by legitimate purposes described above such as collaborative research or institutional subscription).

Distributions to fellow researchers and colleagues. Permitted use: Providing an article to research collaborators, whether in the active or planning stages, on a specific project, such as members of the same lab. Not permitted: Providing an article to colleagues engaged in similar research areas but not engaged in or planning to begin at least one project that is clearly a collaborative or joint effort (except when covered by institutional subscription or where expressly permitted for authors as defined in their signed publication agreement "Consent to Publish and Transfer of Copyright" or "Instructions for Authors" appearing elsewhere on the NDPLS web site.

Commercial use. Permitted use: Distribution of whole abstracts (with permission – see permissions policy) or links to articles through the NDPLS website (to facilitate subscription or article purchase). Not permitted: Distribution of articles to any for-profit agency or its members for use in research or development activities. Permission for distributions of this type could be allowed by SCTPLS with the payment of the appropriate fee; see permission policy.

Comment. NDPLS continues to offer two free downloads from the 2004 volume to anyone who visits the site. Some whole issues are available in print which could offer some cost savings to visitors interested in multiple articles.

NDPLS Journal Citation Report 2009

Compiled by Stephen Guastello & Mark Lynn, Marquette University

Impact and Immediacy factors are now available for *NDPLS* current through December 2008. We compiled Impact and Immediacy Factors based on information available in ISI's *Web of Science*, which encompasses a data base of approximately 4500 scientific journals plus approximately 1400 journals categorized as social sciences.

Impact Factor – We used the traditional computational method, which is the number of citations of *NDPLS* articles that were publishing over a 5-year period divided by the number of articles published during that period. Thus for the 2009 report we counted the citations to *NDPLS* articles that were published in 2003-2007 that were cited in articles that were published in 2004-2008, plus any citations that we found for those articles at the time they were in press and not yet published in *NDPLS*. *NDPLS* published 101 articles during the years 2003-2007. We found 112 citations to those articles in *Web of Science* journals, plus 77 more citations in *NDPLS* 2003-2007. The total of 189 citations divided by 101 articles produces a current impact factor of 1.871.

The Impact Factor does not reflect citations to *NDPLS* articles that were originally published before 2003. Many of the earlier articles continue remain influential to works currently appearing in NDPLS and in other journals.

Immediacy Factor -- This is the number of citations of *NDPLS* articles within one year of the date of publication of each article. In other words, citations for 2003 articles that would count for this index would have had to be published in 2003 or 2004, and could possibly include citations to an NDPLS article in press insofar as that information could be ascertained from the data base. For articles published in 2003-07, there were 43 qualifying citations in the *Web of Science* data base. There were 17 additional citations within *NDPLS* for *NDPLS* articles. The total of 60 citations divided by 101 articles renders an immediacy factor of 0.594.

Commentary – We are aware the ISI's *Journal Citation Reports*, which are produced for some of the journals in the *Web of Science* are now based on an exposure window of two years instead of five years. The earlier thinking was that the five year time period constituted the average "half-life" of an article's influence at the time the computation procedure was instituted. The two-year system allows for more recent updates regarding a journal's influence with less influence of the past, but in our opinion, permits incomparable levels of fluctuation for relatively small-sized journals compared to larger-sized journals. The two-year system also conflates the meaning of the impact factor with the immediacy factor.

The two-year system is accompanied by a new index of a *journal's* half-life, which purports to individualize the computation of the half-life. The half-life index often produces the default value of 10 years for journals that are relatively new, often less than 10 years old. We do not make a comparable computation for *NDPLS*.

We have also surmised that journals that are growing in size (number of articles per year) stand a better chance of improving their impact factors by virtue of generating more opportunities to cite their own material; in the long run approximately half of a journal's citations are self-citations. (The rate for *NDPLS* is less than 50%.) The effect of increasing size on the impact factor is greater under ISI's current counting system that uses a two-year window instead of a five-year window.

Members' News

Mike Radin, Associate Professor of Mathematics at Rochester Institute of Technology, shares some of his recent activity.

I had my first sabbatical during the Spring 2009 quarter, spending it at the Aegean University on Greece's Island of Samos. Samos is in the Eastern Aegean Sea where Pythagoras lived, and is one of five islands across which the university is spread.

My first time teaching in another country, I taught a graduate seminar course in difference equations to students in Aegean's Master's degree program. I also gave two talks at the department's research seminars and did research with my students and some of the faculty in the department. For the course, I used the textbook that I am currently writing, titled *Introduction to Difference Equations*. It was useful to have students work on problems from it and to get their feedback on both the problems and book's style; they gave me several suggestions for future applications of difference equations and improvements to the text. Moreover, I collaborated with my colleague Elias Camouzis who teaches at the American College of Athens, on a paper about a system of rational difference equations.

Not only was it my first time teaching in another country, it was also the first time these Greek students had taken a course from a foreign professor in English. We shared a wonderful cultural exchange. I learned how the Greek academic system works in public schools and in the universities and they asked me many questions about the American public schools and the universities.

The sabbatical opportunity helped further my research in several areas. I worked with a student on a system of Logistic Difference Equations, which can be a potential model for studying organisms in the Aegean Sea. Two students and I analyzed the existence of multiple periodic character of the solutions of a third order non-autonomous rational difference equation; we discovered what happens to the periodicity of the solutions depending in which order the periodic coefficients are arranged in. Working with Elias Camouzis on a system of rational difference equations, we discovered the necessary criteria for the solutions to be bounded, to converge, and for the existence of solutions with minimal period two, and ran comparisons between those criteria for rational difference equations and our *system of* rational difference equations. Studying the long-term behavior of systems of rational difference equations is crucial to develop the theory of difference equations and for future applications.

I was pleased to be invited to return in summer 2010, when I will teach a short seminar on either non-autonomous rational difference equations or on non-autonomous max-type difference equations.

Jeff Goldstein's co-edited book is off the printing presses at ISCE. See more info on their *Complexity science and social entrepreneurship: Adding social value through systems thinking* in this Newsletter's *Nonlinear Dynamical Bookshelf*. Another book, co-authored, is expected out in mid-2010 (pre-orders are possible on

Amazon.com): *Complexity and the nexus of leadership: Leveraging nonlinear science to create ecologies of innovation.*

Hector Sabelli brings us up to date on his work at Chicago Center for Creative Development. He writes: "For the last two years I have been intermittently but seriously sick and I have not attended any meetings of our Society, so I would like to take the opportunity to let friends and colleagues know about the progress of our work at the Chicago Center for Creative Development." To fill us in, he provided a succinct review of the work, in this Newsletter's *Feature Article.*

Dick Thompson co-authored a handbook that hit the bookstands this spring: *Handbook for developing emotional and social intelligence: Best practices, case studies and strategies.* Check it out in this Newsletter's *Nonlinear Dynamical Bookshelf.*

The Society's New Blog

SCTPLS invites interested scholars to visit our new blog (see http://www.sctpls.org/blog) on recent developments in nonlinear dynamical system theory, which includes chaos theory, fractals, complex systems and related topics. These may range from predominantly applied topics to basic research. Relevant examples include NDS applications in economics, social psychology, neuropsychology, and sundry areas of clinical and developmental psychology. We hope to continue this blog for topics that would assist in disseminating information on the various nonlinear methodologies that may be useful to researchers.

The authors of blog pieces are active (dues-paid) SCTPLS members. This is good exposure. Already, over 130 comments have been posted across the posts, some garnering quite a bit of attention. The general cybercommunity is invited to comment – and is!

Active members who would like to post a blog piece should contact David Pincus, pincus@chapman.edu.
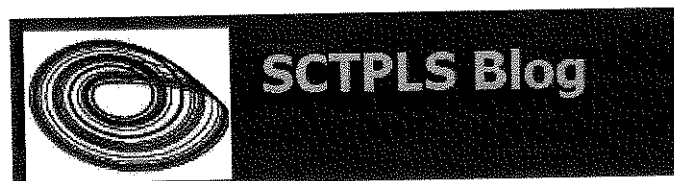
For more information about SCTPLS communications venues: www.societyforchaostheory.org/chaopsyc.html
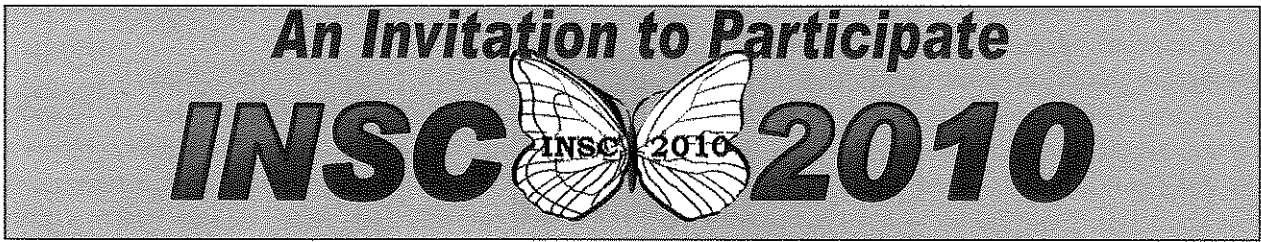
4ᵀᴴ INTERNATIONAL NONLINEAR SCIENCE CONFERENCE

University of Palermo
Palermo, Sicily, March 15-17, 2010

Call for Papers

The principal aim of the INSC is to provide a scholarly environment conducive to promoting exchanges between an array of disciplines to facilitate research and related academic activities in collaboration with colleagues worldwide.
The topics covered by the conference include applications of nonlinear dynamical systems theory and techniques to problems encountered in any area of the behavioral, social and life sciences including psychology, sociology, economics, management sciences, anthropology, aesthetics, education, biology, physiology, ecology, neuroscience and medicine. One or more of the following nonlinear concepts must be an explicit part of the presentation: attractors, bifurcations, chaos, fractals, solitons, catastrophes, self-organizing processes, cellular automata, agent-based models, network analysis, genetic algorithms and related evolutionary processes, econophysics, dynamical diseases, or closely related constructs. The broad mixture of the disciplines represented here indicates that many bodies of knowledge share common principles.
Contributions from other disciplines such as computer science, mathematics and engineering are also welcome provided the main focus of the paper is an application of nonlinear science in the behavioral, social or biological sciences.
Submit Abstracts for papers, posters, and symposia to INSC2010 at: http://www.societyforchaostheory.org/insc/2010/
The deadline for abstracts is **December 21, 2009.** "Early birds" who submit their abstracts early can receive a response from the chair beginning Nov 15. Additional information is posted on the conference web site, which will be updated as events unfold.

Publication Opportunities:
The abstracts to the INSC conference will be indexed in PsycEXTRA, produced by the American Psychological Association. A post-conference edition of the INSC abstracts will be available in PDF on the SCTPLS web site along with editions of abstracts from earlier conferences.
All speakers at the INSC conference are invited to submit their finished articles for review and possible publication in Nonlinear Dynamics, Psychology, and Life Sciences, which is the refereed quarterly research journal published by the Society for Chaos Theory in Psychology & Life Sciences. For manuscript preparation instructions and related information about NDPLS, see www.societyforchaostheory.org/ndpls.
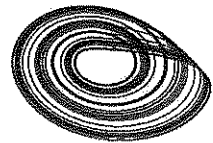
INSC Conference Committee:
Prof. Gaetano L. Aiello, University of Palermo, Chair: aiello@difter.unipa.it
Dr. Dick Thompson, SCTPLS President
Prof. Stephen J. Guastello, Marquette University
Prof. Dimitrios Stamovlasis, Aristotle University

Sponsored by
The Society for Chaos Theory
in Psychology & Life Sciences

8

Calls for Papers for Two Special Issues
of *Nonlinear Dynamics, Psychology, and Life Sciences*

Special Issue on Medical Applications of Nonlinear Dynamics

NDPLS is actively searching for manuscripts for a special issue to be entitled, "Medical Applications of Nonlinear Dynamics." Potential papers could range from the level of individual patients to that of the health care system, and could include such topics as:

- Nonlinear patterns in illness
- Treatment effects and nonlinearity
- Practice change via nonlinear intervention
- Neural networks in clinical decision-making
- Catastrophes in health care utilization

- Nonlinear advice for health care reform
- Modeling ambulatory practice
- Dynamical effects of illness upon the family
- Nonlinear dynamics within the doctor-patient relationship

The project is planned on the following schedule:
- Abstracts are requested prior to submission in order to assist with the organization of the issue contents, and they are welcome any time before the paper submissions deadline. Send abstracts by e-mail to Dr. David Katerndahl, katerndahl@uthscsa.edu.
- Full-text papers need to arrive by December 31, 2009. Papers should be submitted electronically to katerndahl@uthscsa.edu and the editor in chief, Stephen.guastello@marquette.edu simultaneously. Manuscripts should be prepared in APA style. Key style points and small variations that are specific to the journal can be found in the Instructions for Authors on the journal web site.
- Reviews completed by February 28, or sooner to the extent possible.
- Revisions and final edits should be received by April 1, 2010.
- Publication in October, 2010.

We look forward to receiving your abstracts and papers.* If you have any questions about the project, please do not hesitate to ask one of the editors below.

Stephen J. Guastello, Ph.D.
Stephen.guastello@marquette.edu
Editor in Chief

David Katerndahl, M.D.
katerndahl@uthscsa.edu
Special Issue Editor

*See below for standard information on the Journal and types of submissions.

Special Issue on Creativity and Nonlinear Dynamics

NDPLS is actively searching for manuscripts for a special issue to be entitled, "Creativity and Nonlinear Dynamics." Settings and applications could include classrooms, business, science and engineering design, military operations, artistic or literary production. Potential papers could include such topics as:

- Creativity, learning and nonlinear dynamics
- Social creativity as nonlinear affect
- Creativity as a nonlinear dynamical process
- Neural networks and creativity
- Adaptation in emergency problem solving
- Organizational development and business strategies
- Creativity and aberrant brain functioning

- Agent-based modeling of creativity
- Creativity, culture and chaos
- Artistic experience as creative chaos
- Networks and marketing
- Diffusion of innovations

The project is planned on the following schedule:
- Abstracts are requested prior to submission in order to assist with the organization of the issue contents, and they are welcome any time before the paper submissions deadline. Send abstracts by e-mail to Dr. Jayne Fleener, fleener@lsu.edu.
- Full-text papers need to arrive by April 30, 2010. Papers should be submitted electronically to both fleener@lsu.edu and the editor in chief, Stephen.guastello@marquette.edu, simultaneously. Manuscripts should be prepared in APA style. Key style points and small variations that are specific to the journal can be found in the Instructions for Authors on the journal web site.
- Reviews completed by May 31, or sooner to the extent possible.
- Revisions and final edits should be received by July 31, 2010.
- Publication in January, 2011.

We look forward to receiving your abstracts and papers.* If you have any questions about the project, please do not hesitate to ask one of the editors below.

Stephen J. Guastello, Ph.D.
Stephen.guastello@marquette.edu
Editor in Chief

Jayne Fleener, Ph.D.
Dean, College of Education, Louisiana State University
fleener@lsu.edu
Special Issue Editor

*See below for standard information on the Journal and types of submissions.

*Standard Information about the Journal and types of submissions.

Contributions may be theoretical or empirical. Theoretical papers should be firmly grounded in the extant literature and culminate in new principles involving nonlinear dynamics that can be tested; manuscripts heavy on conjecture with little reference to evidence are not encouraged. Reviews of the relevant literature on applications of nonlinear dynamics are also welcome, if they synthesize and interpret this material in novel ways. Empirical papers may include experimental observations, simulations, or analyses of real-world data. Articles will be reviewed by two or more experts in the relevant field.

The purview of the journal is critical to the inclusion of articles: *Nonlinear Dynamics, Psychology, and Life Sciences* publishes papers that augment the fundamental ways we understand, describe, model, and predict nonlinear phenomena in psychology and the life and social sciences. One or more of the following nonlinear concepts must be an explicit part of the exposition: attractors, bifurcations, chaos, fractals, solitons, catastrophes, self-organizing processes, cellular automata, genetic algorithms and related evolutionary processes, neural networks, agent-based models. The broad mixture of the disciplines represented here indicates that many bodies of knowledge share common principles. By juxtaposing developments in different fields within the life and social sciences, the scientific communities may obtain fresh perspectives on those common principles and their implications. Because the journal is multidisciplinary in scope, each article should make an original contribution to at least one substantive area and, to the extent possible, illuminate issues beyond that area's boundaries.

NDPLS is a refereed journal and is published quarterly by the Society for Chaos Theory in Psychology & Life Sciences. Additional information for the preparation of articles for submission can be found on the journal's web site: www.societyforchaostheory.org/ndpls/ .

We look forward to seeing you *in both INSC Palermo and SCTPLS Austin!*

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disciplines, mathematical, and logical disciplines), education, the humanities, society, and philosophy. We range over rather diverse subjects in philosophy, education, research, social applications, and theory. To submit titles and abstracts or make inquires, contact: drbob@drbobtampa.com and frederick.d.abraham@gmail.com

2ⁿᵈ International Conference on Social Entrepreneurship, Systems Thinking and Complexity

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Feature Article

Bios Research 2007-2009
By Hector Sabelli

As many of you may remember, Bios is a non-stationary form of chaos. Bios was discovered in studies of heart rate variation. We have now demonstrated Bios in both healthy and cardiac patients (Sabelli, Messer, Kovacevic, Walthall, & Lawandow, in press). The more recent work has now shown Bios in physical, biological, social, and mathematical processes.

Bios is characterized by novelty (greater variation than randomized copies of the data), diversification (increasing variance in contrast to convergence to an attractor) and temporal complexity (changes in pattern in contrast to uniformity in recurrence and wavelet plots). These three measurable features of time series indicate in my view a creative process.

They are observed in Bios and in random walks but they are not observed in chaotic attractors. Bios is modeled mathematically by bipolar feedback. The process equation, $A(t+1) = A(t) + h*t*sin(A(t))$, where t is time and h is a small constant, generates convergence to pi, periodic order, chaos and then bios as the gain $h*t$ increases. Creative features thus occur after chaos, not between order and chaos.

Regarding physics, we have found Bios in quantum processes, the distribution of galaxies and quasars, and gravitational waves (Sabelli & Kovacevic, 2006; Sabelli & Lawandow, in press; Sabelli, Thomas, Kovacevic, Lawandow, & Horan, in press; Thomas, Sabelli, Kauffman, & Kovacevic, 2006).

Regarding mathematical processes, Bios was found in the series of prime numbers (Sabelli, in press-a; Sabelli, 2007a) and the Riemann's zeta function (Kauffman & Sabelli, in press).

We have also found Bios in animal populations (Sabelli & Kovacevic, 2006, 2008), suggesting a new, causal alternative to evolutionary theory by random mutation and selection.

The implication of these findings is that many, and fundamental, processes, are both causal and creative. Physical, biological and social evolution may thus be caused by similar processes of causal interaction (Sabelli, 2007b). This contrasts with the current focus on random walk models and on chaotic attractors.

We have also found Bios patterns in economic processes and human populations (Sabelli, in press-b). Based on this evidence, we are thus developing a theory of social processes (Sabelli, in press-b)) and explored practical implications regarding economic enterprises (Sabelli, 2008a). These ideas may also have practical implications regarding quantum computation (Sabelli & Thomas, 2008).

Having found Bios in medical studies and later on demonstrating the same pattern in physical and mathematical processes is interesting, as the usual course is to import mathematical and physical models and methods into biology and psychology. I am exploring this way of reasoning from complex issues to simpler ones (Sabelli, 2008b). This issue is further pursued in two books I am preparing, both accepted by publishers, one on *Medical Reasoning*, and the other, in collaboration with Louis Kauffman, on *The Logic of Nature*. I would like also to extend an invitation to our society members for contributions to these books.

References

Kauffman, L. and Sabelli, H. (in press). Riemann's zeta function displays a biotic pattern of diversification, novelty, and complexity. *Cybernetics and Systemics Journal.*

Sabelli, H. (2008b). How medicine informs informatics: Information is asymmetry, not entropy. *The Open Cybernetics and Systemics Journal, 2,* 106-121.

Sabelli, H. & Kovacevic, L. (2008). Biotic complexity of population dynamics. *Complexity, 13*(4),47-55.

Sabelli, H. & Kovacevic. L. (2006). Quantum bios and biotic complexity in the distribution of galaxies. *Complexity 11*(4), 14-25.

Sabelli, H. & Lawandow, A. (in press). Complex biotic patterns in the recordings from LIGO. *Complexity.*

Sabelli, H. & Thomas, G. (2008). The future quantum computer: Biotic complexity. In F. Orsucci & N. Sala (Eds.), *Reflecting interfaces: The complex coevolution of information technology ecosystems.* Hershey, PA: IGI Global.

Sabelli, H. (2007a). The biotic pattern of prime numbers supports the bios theory of creative evolution from radiation to complexity. Proceedings of the International Conference on Complex Systems. *Inter.Journal* Manuscript 2142, available at http://necsi.org/events/iccs7/papers/3114216e0aebd76eb51ebe74680c.pdf

Sabelli, H. (2007b).Bios theory of physical, biological and human evolution. In K. A. Richardson & P. Cilliers, (Eds.), *Explorations in complexity thinking.* Mansfield, MA :ISCE Publishing

Sabelli, H. (2008a). Bios theory of innovation. *The Innovation Journal: The Public Sector Innovation Journal,* Volume 13(3), article 12.

Sabelli, H. (in press-a). The biotic pattern of prime numbers. *Cybernetics and Systemics Journal.*

Sabelli, H. (in press-b). Social theory beyond the collapse of communism and capitalism. *The International Journal of Interdisciplinary Social Sciences.*

Sabelli, H. and Kovacevic, L. (2006). Biotic population dynamics and the theory of evolution. Proceedings of the International Conference on Complex Systems. *Inter.Journal* Complex Systems Manuscript 1793, available at http://www.interjournal.org/manuscript_abstract.php?82762892

Sabelli, H., Messer, J., Kovacevic, L., Walthall, K, & Lawandow, A. (in press). The biotic pattern of heartbeat intervals. *International Journal of Cardiology.*

Sabelli, H., Thomas, J., Kovacevic, L., Lawandow, A., & Horan, D. (in press). Biotic dynamics of galactic distribution, gravitational waves, and quantum processes. A causal theory of cosmological evolution. In A. D. Wachter & R. J. Propst, (Eds.), *Black holes and galaxy formation.* Hauppauge, NY: Nova Science Publishers.
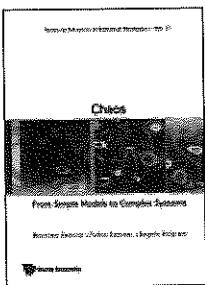
Thomas, G. H., Sabelli, H., Kauffman, L. H., & Kovacevic, L. (2006). Biotic patterns in Schrödinger's equation and the evolution of the universe. *Inter.Journal* Complex Systems Manuscript 1787, available at http://www.interjournal.org/manuscript_abstract.php?1161328888

The Nonlinear Dynamical Bookshelf

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Busemeyer, J. & Diederich, A. (2010). *Cognitive modeling.* **San Francisco: Sage.** ISBN 978-0-7619-2450-0. For undergraduate and graduate students in the cognitive sciences, this text introduces the basic methods used to build and test cognitive models. Busemeyer (psychological and brain sciences and cognitive science, Indiana U., Bloomington) and Diederich (psychology, Jacobs U., Bremen, Germany) present a basic problem in each chapter, along with examples of different models. They include tutorials of psychological, mathematical, statistical, and computational methods and how to use these tools in modeling recognition, categorization, decision making, and learning. - *Book News Inc. Portland, OR).* Very clear introduction to the mathematics of cognitive modeling. While not explicitly dynamical, it entices one to consider the hybridization of dynamics, complexity, and cognitive modeling. – *post on CHAOPSCY listserve [author name lost, not refound]*

Cencini, M., Cecconi, F., & Vulpiani, A. (2009). *Chaos: From simple models to complex systems.* **Hackensack, NJ : World Scientific.** Series on Advances in Statistical Mechanics - Vol. 17. ISBN: 978-981-4277-65-5. The book aims to guide science and engineering students through chaos and nonlinear dynamics from classical examples to the most recent fields of research. The first part, intended fo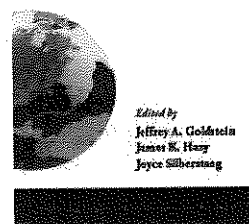r undergraduate and graduate students, is a gentle and self-contained introduction to the concepts and main tools for the characterization of deterministic chaotic systems, with emphasis to statistical approaches. The second part can be used as a reference by researchers as it focuses on more advanced topics including the characterization of chaos with tools of information theory and applications encompassing fluid and celestial mechanics, chemistry and biology. The book is novel in devoting attention to a few topics often overlooked in introductory textbooks and which are usually found only in advanced surveys such as: information and algorithmic complexity theory applied to chaos and generalization of Lyapunov exponents to account for spatiotemporal and non-infinitesimal perturbations. The selection of topics, numerous illustrations, exercises and proposals for computer experiments make the book ideal for both introductory and advanced courses.- *Publisher*

Frazier, K. (Ed.). (2009). *Science under siege.* **New York: Prometheus Books.** ISBN 879- 1-59102-715-7
Frazier is editor of the Skeptical Inquirer, and he has collected recent articles from his publication that focus primarily on scientific controversies such as evolution and intelligent design, evidence of global warming and the real value of vaccinations. 37 articles from noted science authors such as Stuart Jordan, Ann Druyan and Mario Bunge provide general (and generally skeptical) readers with stimulating discussions of a variety of public controversies and pseudoscientific claims. Carl Sagan's final piece on the relationship between science and skeptical inquiry is also included. - *Book News, Inc., Portland, OR.*

Goldstein, J., Hazy, J. K., & Silberstang, J. (Eds.) (2009). *Complexity science and social entrepreneurship: Adding social value through systems thinking.* **Litchfield Park, AZ: ISCE Publishing.** A Volume in the Exploring Organizational Complexity Series Volume 3. ISBN/ISSN 9780984216406 . Available at www.iscepublishing.com "The greatest contribution from complexity science is the theoretical link it makes between sustainability and the dynamics of open systems in disequilibrium. Amidst a burgeoning literature

of social entrepreneurship this volume is the very first to make this link explicit, and in so doing offers a leading-edge perspective on every aspect of social entrepreneurship. Each of the chapters generates new insights and frameworks for researchers, practitioners and policy makers." - Benyamin Lichtenstein

Hughes, M., Thompson, H. L., & Terrell, J. B. (2009). *Handbook for developing emotional and social intelligence.* **San Francisco: Pfeiffer.** ISBN: 978-0-470-19088-3. This handbook is a rich collection of knowledge and solutions that will appeal to anyone involved in developing leaders and teams. The handbook features case studies, best practices and proven tools that show how emotional and social intelligence is being harnessed to deliver improved individual team and organization effectiveness. Contributions focus on learning hot spots such as leadership, recruitment, conflict resolution, team development and stress management. Social and emotional intelligence go a long way in explaining how and why some employees succeed more than others. While most books only discuss the background of emotional intelligence, this handbook is a practical guide for development. - *Publisher*

Mitchell, M. (2009). *Complexity: A guided tour.* **New York: Oxford University Press.** ISBN-13: 978-0195124415. Response to critics, especially Horgan. SFI, review of fundamental concepts. Per post on CHAOPSYC listserve, "Highly recommend Mitchell's Complexity. She'd been lecturing at Santa Fe Institute and was encouraged to turn her lectures into a book. As a result, the book has an exceptionally good narrative flow--it is a 'good read.' While members of this list may not learn anything new from her work, it is a solid overview drawn from many scholarly works. Her bibliography is extensive and well done. I would certainly recommend Complexity for a course reading list. BTW: Her dissertation advisor was Douglas Hofstadter." - *Karen R. Detweiler*

Morin, E. (2008). *On complexity.* **Cresskill, NJ: Hampton.** ISBN 978-1-57273-801-0 This volume contains some key essays by French thinker Edgar Morin on the subject of complexity, and specifically on what Morin calls complex thought. Contents: Foreword: Edgar Morin's Path of Complexity, Alfonso Montuori. BLIND INTELLIGENCE. Becoming Aware. The Pathology of Knowing, Blind Intelligence. The Need for Complex Thought. COMPLEX PATTERN AND DESIGN. Indo-America. Systems Theory. Open Systems.

Information/Organization. Organization. Self-organization. Complexity. Subject and Object. Coherence and Epistemological Opening. Scienza Nuova. For a Unity of Science. Integration of the Realities Banished by Classical Science. Beyond Classical Either/Or Alternatives. The Paradigmatic Turning Point. THE PARADIGM OF COMPLEXITY. The Paradigm of Simplicity. Order and Disorder in the Universe. Self-organization. Autonomy. Complexity and completeness. Reason, rationality and rationalization. The Necessity of Macro-concepts. Three Principles. Toward Complexity. COMPLEXITY AND ACTION. Action Is Also a Wager. Action Escapes our Intentions. The Non-trivial Machine. Preparing for the Unexpected. COMPLEXITY AND THE ENTERPRISE. Three Causalities. From Self-organization to Self-eco-organization. To Live and Make a Deal with Disorder. Strategy, Program, and Organization. Complementary and Antagonistic Relations. The Necessity for a Lived Solidarity. ON THE NOTION OF THE SUBJECT, translated by Sean M. Kelly. THE EPISTEMOLOGY OF COMPLEXITY, translated by Sean M. Kelly. Appendix 1: The Concept of System, translated by Sean M. Kelly. Appendix 2: A New Science of Autonomy. Notes. Author Index Biology, evolution, philosophy, culture, epistemology, ethics general systems theory. - *Publisher*

Orsucci, F. & Sala, N. (2008). *Chaos and complexity: New research.* **Hauppauge, NY: Nova Science Publishers.** ISBN 978 160 456841 7 Covers a surprising diversity of topics, including fine art, visual and semantic ambiguity, crystal and flame, self-organized criticality in urban spatial development, structure of music and controlling chaos in the brain, contextual emergence of mental states from neurodynamics, processing of positive versus negative emotional words, and more!!Somebody who has the time and the necessary diverse erudition ought to review it. – *RAMG*

Scheffer, M. (2009). *Critical transitions in nature and society.* **Princeton, NJ: Princeton University Press.** ISBN13: 978-0-691-12204-5. How do we explain the remarkably abrupt changes that sometimes occur in nature and society--and can we predict why and when they happen? This book offers a comprehensive introduction to critical transitions in complex systems--the radical changes that happen at tipping points when thresholds are passed. Marten Scheffer accessibly describes the dynamical systems theory behind critical transitions, covering catastrophe theory, bifurcations, chaos, and more. He gives examples of critical transitions
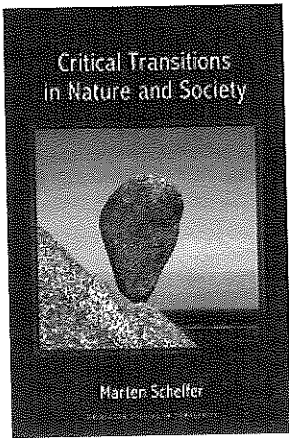
in lakes, oceans, terrestrial ecosystems, climate, evolution, and human societies. And he demonstrates how to deal with these transitions, offering practical guidance on how to predict tipping points, how to prevent "bad" transitions, and how to promote critical transitions that work for us and not against us. Scheffer shows the time is ripe for understanding and managing critical transitions in the vast and complex systems in which we live. This book can also serve as a textbook and includes a detailed appendix with equations. - *Publisher* This is one of those books that is readable and understandable by just about anyone. It provides a theoretical grounding and then covers historical natural

and social regime shifts and critical transitions using case studies that are interesting and, I think, useful in their detail. Finally, it discusses policy making and what might be done to identify and address such issues. I'm still reading it but am excited. - Gus Koehler

Turchin, P. & Nefedov, S. (2009). Secular cycles. Princeton, N. J. Princeton University Press. ISBN13: 978-0-691-13696-7. Traces the long term dynamics of population numbers, incomes, state finances, and sociopolitical stability in England, France, and Russian during the medieval and early modern periods. The availability of data and care taken with the analysis is remarkable and eye opening. The book tests Jack Goldstone's demographic-structural theory.- *Gus Koehler*

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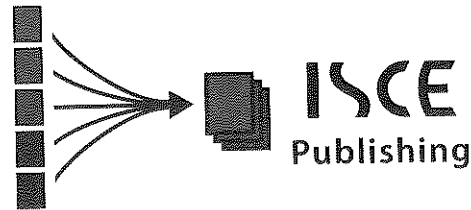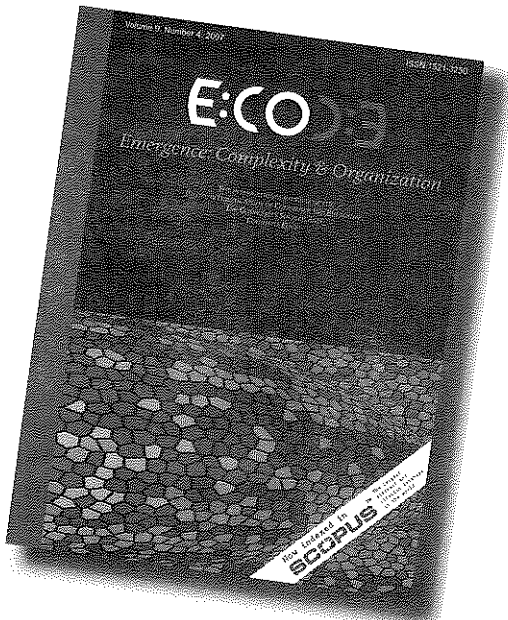
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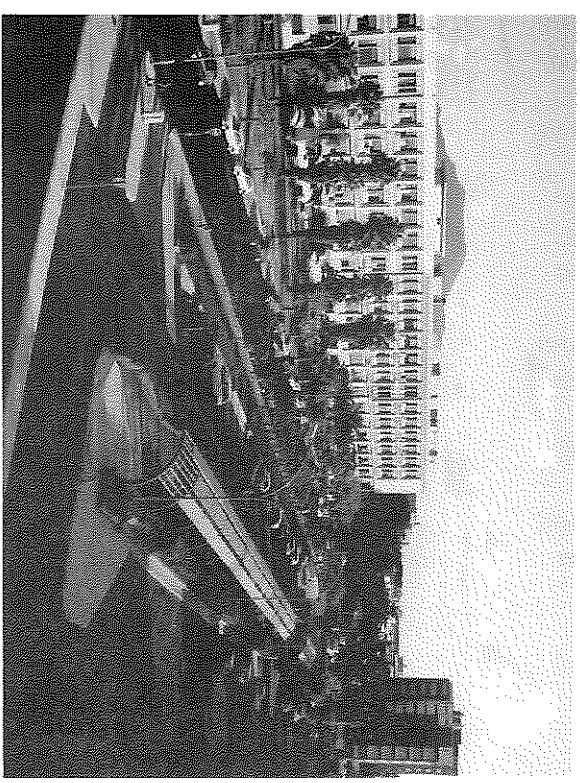
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