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

# Time's News

An  
Aperiodic  
Newsletter

Time's News No. 25

International Society for the Study of Time

JANUARY 1995

## A MESSAGE FROM THE PRESIDENT

With the theme of ISST's forthcoming Conference "Time, Order, Chaos", complexity is inevitably approached as well. Reading through M. Mitchell Waldrop's skilled journalistic account of work and life at the Santa Fe Institute (M. Mitchell Waldrop, *Complexity: The Emerging Science at the Edge of Order and Chaos*), I was nevertheless struck by the fact that time goes unnoticed. Complexity, adaptations, upheaval; the richness of interactions in systems that permit spontaneous self-organization; adaptive systems that possess a kind of dynamism that makes them qualitatively different from static, merely complicated objects or systems; unpredictability and irreversibility—they all contribute to exciting scientific work carried out in the Arizona desert. But time does not form part of it.

Maybe this has to do with the search for a balance—for identifying a balance point between order and chaos, to ride the wave at the edge of chaos where components of the system never quite lock into place and yet never quite dissolve into turbulence either. The same yearning for a bit of cosmic management turns up again in a recent book by Kevin Kelly (*Out of Control: The New Biology of Machines*) which is a techno-enthusiast's celebration of the possibilities to create "artificial life" with the help of computers. Kelly too locates life on the edge of chaos, "that lambda point where there is just enough information flow to make everything dangerous". And "rigid systems can always do better by loosening up a bit, and turbulent systems can always improve by getting themselves a little

more organized." They do this, apparently, quite happily in a Californian mood, again without recourse to time—with the possible exception that we are told that the "old ecology movement" which lacked a sense of complexity, that addressed the riddles of form, history and development" has given way to the optimistic, electronic environmentalism of the 1990s—to what is now called "deep evolution".

Meanwhile, turning to what my friends in the humanities read, I am struck by the fact of an unprecedented popularity of biographies and autobiographies. Even the famous French historical School of the "Annales", now in its fourth or fifth generation, is marked by a return towards the writing of biographies. Georges Duby, who has written not only on the history of love in the 12th century but also on the battle of Bouvines and a biography of Guillaume le Marechal, agrees when saying "we are enlarging the role of narrative, we are resuming the use of narrative".

"Narrative and Identity" was also the theme of a recent workshop organized by Jens Brockmeier in Vienna. It will be followed by one devoted to the writing of (auto)biographies: How to narrate the complexity of a life in time, how to rationalize contingency that marks our lives so profoundly. At the edge of order and chaos there may not only be a balance (or chaos point), but a continuing effort to weave the time of a life together. But to be fair to our friends, the physicists in the Santa Fe Institute and elsewhere: after all, in a biography the beginnings and the end are known. In evolutionary processes and self-organizing systems, we still have much to learn about the beginnings and we know little about where they and we will end up.

Helga Nowotny



## *THE FOUNDER'S COLUMN*

Dimensions of Time and Life, the eighth volume of The Study of Time series, will be dedicated "to the memory of George H. Ford who taught dignity and kindness in thought, word, and conduct." An internationally known Dickens scholar and founding editor of the Norton Anthology of English Literature he died last December at the age of seventy-nine. He was active in the Society since 1970 and served as its President 1979-1983.

His passing brought to my mind his paper, "Death, Literature, and its Consolations" read at our 1979 Alpach meeting and included in The Study of Time IV. Here are the essay's closing paragraphs.

*As a brief finale, let us consider an especially complex treatment of death and of the soul's mysterious voyage and "art and song" too. It is the striking poem of meditation by. . .William Butler Yeats: "Sailing to Byzantium." Yeats writes,*

*And therefore I have sailed the seas and come  
to the holy city of Byzantium.*

*But for Yeats the "holy city" is no longer Bunyan's Christian heaven. . .It is a city not of saints but of "sages" who Yeats addresses.*

*Consume my heart away; sick with desire  
And fastened to a dying animal  
It knows not what it is; it gathers me  
Into the artifice of eternity.*

*The voyage here is still a mysterious one and the destination mysterious too, for unlike Pilgrim's Progress, let us say, the fresh beginning is not specified. Nevertheless these late poems by Yeats...function restoratively for most readers who can say Queen Mary's words again, but without knowing just what it is that may be in store for them: "In my end is my beginning."*

My hope is that as the older members of ISST pass, younger scholars will be prepared to take over. The slate of candidates for the new Council suggests that this shift has already begun.

JTF

### **Ninth Conference of ISST** *Time, Order, Chaos*

Opening: Sunday, July 2, 1995  
Evening reception

Closing: Saturday, July 8, 1995  
After business session



## REPORT OF THE EXECUTIVE SECRETARY

The following report will focus on preparations for our forthcoming conference, and I urge your careful attention to the tiresome matters of reservations, registration, deadlines, and general communications that will be required to make the conference a success. For a general introduction to the conference site and other preliminary information, please refer to p. 3 of the April 1994 issue of *Time's News*; offprints of this page are available and can be sent on request. Elsewhere in this issue you will find the following items pertaining to the conference: (1) a hotel brochure showing the superb facilities of Le Chantecler, (2) a hotel reservation form to be returned directly to the hotel not later than **1 May 1995**, (3) a conference preregistration form to be completed and returned to me by the same date, on which form you may also reserve ground transportation to the hotel, and (4) a tentative list of paper and poster presenters and their topics.

We hope that as many members as possible will be able to join us and enjoy the special personal and intellectual atmosphere that prevails at each of our international conferences. We have selected a beautiful site in an interesting part of the world, and I can assure you that the conference facilities will be the best we have ever had. You will be well fed with hearty French-Canadian cuisine, and you will find the hotel both scenic and extremely comfortable. I have personally visited the site and I believe we have been able to negotiate a very competitive price for our accommodations. In arranging previous international conferences, I have found that two matters are uppermost on everyone's mind—costs and travel arrangements—so I will address these issues first.

**Our conferences are open to all members** and there will be no additional fees for accompanying family members and friends, other than travel and lodging costs. Please note that the Society will not be responsible in any way for travel, accommodation, or other personal expenses; all such arrangements are the responsibility of the individual participants. Please note also that we cannot guarantee the availability of hotel rooms or ground transportation if you fail to reserve by 1 May 1995. The Society expects all presenters to have preregistered, reserved their hotel

accommodations, and paid their dues for 1995, and we reserve the right to remove their presentation from the program if they fail to do so.

**Concerning costs:** All hotel and conference expenses may be paid by credit card (Master Card or Visa), personal checks in Canadian dollars, and all payments to the Society are quoted and payable in US dollars and drawn upon a U.S. bank, travelers' checks, or cash. All hotel expenses are quoted and payable in Canadian dollars and all payments to the Society are quoted and payable in US dollars. We regret that we are unable to accept Eurocheques and similar instruments. For those registering on-site, our treasurer will accept your credit card charges or determine equivalent amounts in Canadian or US dollars. There are banks for currency exchange at both international airports. The latest quotation on the Canadian dollar was .71 of the US dollar, somewhat lower than last April; members from various countries will want to track the Canadian dollar against their local currency, but the Canadian economy has not been strong lately and is not expected to surge ahead in the near future. Nevertheless, members should be prepared for any fluctuations that may occur.

My calculations show the hotel costs to be approximately USD \$88 per person, per day, sharing a double room; USD \$118 per person, per day, occupying a single room. This rate includes room with private bath, 3 meals per day, and all tips. We will endeavor to match persons in double rooms on request. Provincial and local taxes (ca. 11%) will be added to the above amount, but most of these are refundable to visitors and refund forms will be available at the hotel.

Apart from your lodging expenses and the conference fee, what other costs will there be? First of all, ground transportation to the hotel, ca. 90 kilometers north of Montreal. We have arranged for the hotel's private bus (seating 24) to make two trips on 2 July from each of Montreal's international airports; the cost will be USD \$8 per person, per trip. Car rentals are also available at either airport. Approximate taxi fares to the hotel are as follows: from Mirabel (most flights from Europe), \$55 Canadian; from Dorval (most other flights), \$95 Canadian. Other expenses will include all wine and liquor purchases, bar tips, optional excur-



sions (see below), and ordinary personal expenses. There will be a modest surcharge for the conference banquet on Friday evening, but members who prefer not to attend the banquet are of course welcome to join us for the afterdinner festivities and banquet address.

I should add a few words of advice on ground transportation. Most flights from Europe arrive between 14:00 and 17:00 and Mirabel is quite close to the hotel; for persons arriving in groups or on delayed flights, sharing a taxi is almost as economical as taking our bus. Dorval is another matter, as flights from the US and Canada arrive virtually all day; we strongly advise these participants to plan their arrival between 11:00 and 16:00. We plan two trips from each airport, depending on the reservations we receive; look for a bus marked "Le Chantecler" in the usual bus loading zone at each airport, and a bus schedule will be available at ground transportation counters. No evening transportation will be available, so your options then will be taxi or rental car. We do not plan any formal opening ceremony on Sunday evening, 2 July, but we will gather on the terrace of the hotel for conviviality and an informal reception and buffet dinner.

Now for **the meeting itself**. Our daily schedule will be as follows: breakfast at your convenience, a working session from 09:00 until 12:30 (with a coffee/tea break), lunch at 13:00, a working session from 14:30 until 18:00 (with a coffee/tea break), and dinner at 19:00. Each session will include four papers, grouped by topics, with ca. 35 minutes per paper and 10 minutes of discussion. A final schedule and a booklet of abstracts will await you on arrival. Wednesday afternoon and evening will be kept free for excursions, for which see below. Evening events are as follows: on Monday, the poster session and the opening of the book exhibit; on Tuesday, a program of short Canadian films in Le Chantecler's theater; on Wednesday, your choice; on Thursday, an evening event to be arranged; and on Friday, the final conference banquet and presentation of the first J. T. Fraser Book Prize. The conference will conclude on Saturday morning with a business meeting at 09:00. Your hotel reservations begin with dinner on arrival day and end with lunch on departure day.

**Le Chantecler is able to arrange the following excursions** (among many others too numerous to list): horseback riding, seaplane trips, white-water rafting, a lake cruise, fishing, hiking, winetasting, and the like. All of the hotel's many sports facilities will be available

without charge to participants. The area around Le Chantecler is charming and members who prefer to arrange their own schedule will not be bored. The hotel is also able to arrange for child care and will quote children's prices on request.

I am grateful to the members of our local arrangements committee: Professors Claudia Clausius and Richard Hancox (Concordia University) and Dr. Michael Crawford (McGill University).

I close with a word on communications: The Canadian postal service is not always reliable and work stoppages can occur without notice. (Not that someone living near Chicago can brag about the U.S. postal service!) We strongly recommend that members fax their reservation forms to Le Chantecler; members from Eastern Canada and the USA may also take advantage of their toll-free 800 telephone reservation line. I regret that the Executive Secretary is unable to accept your preregistration form by fax, so the postal service is your only option. Should you wish to telephone me with a question or a problem, you can usually find me at (812) 332-5034 between 09:00 and 12:00 Eastern Standard Time on Monday, Wednesday, and Friday; please do not call at other times. **Box 6195, Bloomington, IN 47407, USA** is open 24 hours per day, and I will try to assist you with any problems you may encounter.

\* \* \* \* \*

A brief postscript on other ISST matters: our nominations committee is preparing a slate of candidates for our forthcoming election, and you may expect to receive a ballot during the next few weeks. Our treasurer will also be sending out dues statements for 1995, which you may already have received. A selection committee is also hard at work evaluating books nominated for the first J. T. Fraser Prize, and we expect to announce this award at the conference banquet. Thank you for your patience with this long report, and for your attention to its many details

Lewis Rowell  
Executive Secretary



**BOOK EXHIBIT**

As at our prior conferences, there will be a book exhibit held in connection with the ninth conference of this Society, July 1-8, 1995.

If you wish to have your time-related books included, then please mail a copy of each book ahead or ask your publisher to do so. The books are to be mailed to:

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 Prof. Paul Harris  
 ISST Book Exhibit Chairman  
 Hôtel le Chantecler  
 PO Box 1048  
 Sainte Adèle (Québec)      HOLD FOR ARRIVAL  
 CANADA JOR 1LO              ON JULY 1st  
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Please make certain that your books are mailed in time to arrive there by July 1st. There is no charge for exhibiting your books; the Society will absorb the expenses of renting the exhibit room. But also note that neither the Society nor any of its officers assume liability for lost books.

It is recommended that you enclose a number of order blanks, showing discounts available for ISST members.

The books will be retained for consideration for review in the "Time's Books" column of Time's News.

**BOOK STORE**

*Time: the Modern & Postmodern Experience* by Helga Nowotny considers the implications of worldwide simultaneous experience, and the reorganization of time involved in the continuous technological innovation which marks our era.

220 pages  
 hardback £35.00 / \$29.95  
 Publication: September 1994

This book is available at a 25% discount to members of the International Society for the Study of Time. The price after discount will be £28.25 (£26.25 + £2.00 postage) or \$25.46 (22.46 + \$3.00 postage).

In North America, please send Mastercard, Visa or American Express details, quoting ref. ISST95 to:

Blackwell Publishers  
 c/o AIDC  
 PO Box 20  
 Williston, VT 05494-0020  
 Fax: (802) 864-7626.

Residents of MA, IL, NY and VT must add state sales tax. Canadians must add 7% GST.

In the rest of the world, send credit card details to Lorna Berrett, Polity Press, 108 Cowley Road, Oxford, OX4 1JF, U.K. or fax on 1-865-791347.

**EDITOR'S NOTES**

As the ninth conference of ISST draws nearer, concerns about the ordering of events and shaping of time lines become more immediate. Therefore, this issue of Time's News focuses primarily on giving members information about the conference program, conference registration, and accommodations at Le Chantecler. Please note that the registration and hotel reservation forms are included in the mailing envelope together with the newsletter and a brochure from Le Chantecler.

With preparation for the upcoming conference comes also a sense of closure. The Study of Time VIII is in the final stages of completion. Contributors will receive page proofs by the first week of February. After these proofs have been returned and indexed, the volume will be ready for publication. The projected publication date is August 15, 1995. Advance copies should be available for viewing at Le Chantecler.

Any news, notes or information you would like to have included in the next issue of Time's News should be sent to:

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 Marlene P. Soulsby  
 Pennsylvania State University  
 Worthington Scranton Campus  
 120 Ridge View Drive  
 Dunmore, PA 18512 USA  
 FAX: 717-963-4783      E-mail:mps2@psuvm.psu.edu



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*Ninth Conference of the International Society for the Study of Time*  
2 - 8 July 1995, Le Chantecler, Sainte-Adèle, Québec, Canada

Tentative Program

- Barbara Adam (University of Wales, Cardiff), "The Implicate Order of Social Chaos"
- Alexander J. Argyros (University of Texas, Dallas), "Interdisciplinarity and Time"
- Mark H. Aultman (Worthington, Ohio), "Complexification, Chaos, and Temporal Ordering"
- Patrick L. Baker (Mount Allison University, Sackville, Canada), "Emerging Complexity: Perspectives of Time, Chaos, and Society"
- Richard A. Block (Montana State University, Bozeman) and Dan Zakay (Tel-Aviv University), "Human Duration Judgment Age- and Sex-Related Differences"
- Jens Brockmeier (Oxford University), "Built and Unbuilt Space: Time and Memory in Architecture"
- Herbert Bronstein (Lake Forest College), "Ordering the Flux of History: The Periodic Segmentation of Mundane Time"
- Paul Burger (University of Basel), "'Time (Order) Came into Existence from Nothing.' What, in cosmological Terms, Does This Mean?"
- John T. Burns (Bethany College), "Temporal Synergism as a Source of Order in the Physiology and Behavior of Vertebrate Animals"
- Claudia Clausius (Concordia University, Montreal), "Waiting: The Suspension of Order and Chaos in Post-Modern Drama"
- Michael Crawford (McGill University Cander Centre), "Transformations in Null Mutants of Hox Genes: Do They Represent Attempts to Instill Order in the Face of Temporal Discontinuities during Mouse Development?"
- Avshalom C. Elitzur (Weizmann Institute of Science, Israel), "Time Transience and Order Decrease: An Enigmatic Link"
- Michael G. Flaherty (Eckerd College), "Determinism and Indeterminism in the Perceived Passage of Time"
- J. T. Fraser (ISST, Westport, CT), "From Chaos to Conflict" (the Founder's Lecture)
- Enrico Giannetto (University of Pavia), "Epistemological Implications of Chaotic Space-Time"
- Sabine Gross (University of Wisconsin, Madison), "Narrative Time and the Order of the Text"
- Ronald Gruber (Stanford University), Steve Matthews (Livermore Laboratories), and Doug Blake (Washington University), "A Uniform Scale of Time and its Relevance for Chaos Theory"
- Robert Grudin (University of Oregon), "Shakespeare and the Renaissance Discourse of Time and Chaos"
- Paul Halpern (Philadelphia College of Pharmacy and Science), "Clocks, Chaos, and the Early Universe"
- Ferenc Hammer (The Joint Eastern Europe Center for Democratic Education and Governance), "Changes of Time or Time for Change? Time, Change, and Modernity in Hungary in the Past Half Century"
- Richard J. Hancox (Concordia University, Montreal), "Harold Innis's Plea for Time: A Selection of Canadian Short Films"



- Paul A. Harris (Loyola Marymount University), "Death Just Isn't What It Used to Be: Time and Form in the Complexity Sciences and Literature"
- Eugene Heath (SUNY, New Paltz), "Spontaneous Order"
- William J. M. Hrushesky (Stratton VA Medical Center, Albany), "The Demands of Predictable Multi-Frequency and Chao-Periodic Biology upon Drug Delivery System Specifications: Where Engineering and Biology Meet"
- Georges Kamarinos (CNRS, Grenoble), "The Perception of Time by an Evolutionary System: The Importance of  $1/f$  Noise"
- Jonathan D. Kramer (Columbia University), "Concepts of Time and Chaos in Postmodern Music"
- Therezinha Moreira Leite (University of Sao Paulo), "Dream 'Chaotic' Thinking in Personal Construction"
- Rémy Lestienne (University of Paris VI), "Time, Chaos, and Memory: From Physical Objects to Living Beings"
- Emily Lyle (University of Edinburgh), "Order and Chaos in the Diurnal, Lunar, and Annual Cycles"
- Murray MacBeath (University of Stirling), "Three Ways of Foreknowing: Newcomb's Paradox Resolved"
- Donald F. Miller (University of Melbourne), "'The Neighborhood and Chaos' or 'Where Butterflies Fear to Flutter'"
- Alberto Montare (William Paterson College), "Time, Mind, and the Acquisition of Knowledge"
- Helga Nowotny (University of Vienna), Presidential Address
- Lawrence H. Osborn (Cambridge University), "Against the Stoics: Non-Order and Temporality in Contemporary Christian Theology"
- David Park (Williams College), "Fortunes and Misfortunes of Laplacian Determinism"
- Réjean Plamondon (Ecole Polytechnique de Montreal), "The Emergence of Regularity and Invariance in Neuromuscular Systems: The Case of Rapid Human Movements"
- Huw Price (University of Sydney), "Chaos Theory and the Difference between Past and Future"
- Eva Ruhnau (Ludwig Maximilians University, Munich), "Discrete and Continuous Time: The Now and the Emergence of Order"
- Mike Sandbothe (Otto von Guericke University, Magdeburg), "The Self-Organization of Time in Electronic Media"
- C. V. Seshadri (Shri AMM Murugappa Chettiar Research Centre, Madras), "Does Time Create Number?"
- Helen Sills (Purley, Surrey, England), "Time, Order, and Stravinsky"
- John J. Stuhr (Pennsylvania State University), "Time and Morality: The Ethics of Order and the Ethics of Chaos"
- Peter Tass (University of Duesseldorf), Harald Hefter, Arne Wunderlin, and Hans-Joachim Freund, "Artificial Time Delay in Motor Control Loops Induces Chaotic Behavior"
- Robert Thornton (University of the Witwatersrand), "Human Violence: A Behavior at the Boundary of Chaos and Order"
- Nicholas Tresilian (Marshfield, Wilts, England), "Time, Order, and Chaos in Eastern Europe—A Western View" (banquet address)
- Thomas P. Weissert (Saint Joseph's University, Philadelphia), "Similarity of Uncertainty Across Temporal Levels"

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120 Ridge View Drive  
Dunmore, PA 18512

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# Time's News

*International Society for the Study of Time*  
*January, 1995*



INTERNATIONAL SOCIETY FOR THE STUDY OF TIME  
Ninth Conference, July 1995

Preregistration Form

Instructions: To preregister and reserve ground transportation to and from the conference hotel, please complete and return this form to the Executive Secretary, Box 6195, Bloomington, IN 47407, USA. The deadline for preregistration (USD \$ 70) is 1 May 1995; the fee for subsequent or on-site registration will be USD \$ 80. Ground transportation must also be prepaid, and we cannot guarantee the availability of ground transportation if reservations have not been received by 1 May 1995. For further information please refer to the report of the Executive Secretary elsewhere in this issue of Time's News. Please fill in the requested information, typewritten or printed LEGIBLY.

Name (preferred title):

Affiliation:

Preferred mailing address with all necessary postal codes:

Fax # (if available):

Number of persons accompanying you:

Travel Plans: I plan to arrive at (please circle) **Dorval** or **Mirabel** airport, at approximately \_\_\_\_\_ (a.m. or p.m.) on \_\_\_\_\_ (date) via \_\_\_\_\_ (airline, or "other"), flight # \_\_\_\_\_.

Ground Transportation: I/we shall/shall not (please circle) require bus transportation to and from the hotel.

Payment: My check for the amount(s) shown below is enclosed, made out in US dollars and payable through a U.S. bank \_\_\_\_\_ (please tick off if this is your payment option). We are not able to accept Eurocheques or other similar means of transferring foreign funds.

Or

Please charge to my Master Card or Visa credit card (please circle):

Credit Card #:

Expiration date:

Signature (required):

Name (in block letters) exactly as it appears on your credit card:

\_\_\_\_\_ Preregistration - USD \$ 70  
\_\_\_\_\_ Ground transportation - USD \$ 8 per person, per trip (arrival, departure)

Please address any questions and bring any problems to the attention of the Executive Secretary at the address shown above.









**INTERNATIONAL SOCIETY FOR THE STUDY OF TIME**  
**JUNE 30 TO JULY 8, 1995**

**Reservation Request**

Please mail this request to: Reservation Manager  
Hôtel Le Chantecler  
P.O. Box 1048  
Sainte-Adèle (Québec)  
JOR 1L0  
TEL.: (514) 229-3555  
FAX:" (514) 229-5593

Please reserve \_\_\_\_\_ room(s) for \_\_\_\_\_ person(s)

Name \_\_\_\_\_ sharing with \_\_\_\_\_  
\_\_\_\_\_

Address \_\_\_\_\_ City \_\_\_\_\_

Prov/State \_\_\_\_\_ Postal Code \_\_\_\_\_ Phone \_\_\_\_\_

Arrival date \_\_\_\_\_ Time \_\_\_\_\_ Departure \_\_\_\_\_

**RATES:** Taxes not included - net, non-commissionable

FULL AMERICAN PLAN (Canadian Dollars)

\$166.00 per night, single occupancy (rooms)

\$124.00 per night, per person, double occupancy

Plan F.A.P. (3 meals and gratuity charges included)

Reservations must be received by **May 1, 1995**. All reservations must be accompanied by a deposit representing the first night of occupancy. After that time, reservations will be accepted subject to availability.

**CANCELLATION POLICY:**

Upon 14 days written notice of cancellation, your deposit will be refunded less 20% administration fee.

Upon 13 days and less written notice of cancellation, your deposit will not be refunded.

\_\_\_\_\_ Cheque enclosed \_\_\_\_\_ Credit Card

Type \_\_\_\_\_ Number \_\_\_\_\_ Expiry \_\_\_\_\_

Signature \_\_\_\_\_



INTERNATIONAL MONETARY FUND  
MEMORANDUM FOR THE EXECUTIVE DIRECTORS

THE GAMBIA

1. The Gambia is a small, landlocked country in West Africa. It has a population of approximately 1.2 million and a gross domestic product of about \$1.5 billion. The economy is heavily dependent on agriculture, particularly groundnuts and rice. The country has a long history of British colonial rule and is a member of the Commonwealth of Nations.

2. The Gambia's economic growth has been slow and volatile in recent years. The country has a high unemployment rate and a significant foreign debt burden. The government has implemented various economic reforms to address these challenges.

3. The Gambia's inflation rate has been high and volatile in recent years. The government has implemented various measures to control inflation, including monetary and fiscal policies.

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12. The Gambia's economic situation is complex and requires a comprehensive approach to address the underlying causes of its economic problems.

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APPENDIX

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