

CARROLL LOUIS WILSON
MC 29 BOX 54 F 2063

Wilson Class Notes, 1972

OK

CLW Notes - 15.963

First Meeting - 13 September

Items

- Announcement and CV
- Preliminary Schedule
- Roll cards - Wednesday 20th
- Bibliography then - Jan W.

Question

- Readers of Limits of Growth
- Accessibility at Coop, elsewhere
- Copies French, Italian, Dutch, Japanese
- Others - German, Spanish, etc.

Topics for Today

- A. If oversubscribed + 15 procedure as follows:
- From announcement - ability to think and write
 - Up to 2 paragraphs double-spaced "Why you want to participate in seminar"
 - Attach name, address, telephone number - how we reach you
 - Deliver to E40-253 by noon Monday 18th
 - Will notify decision by Tuesday evening 19th - if we have not reached you please phone 3-1997 to learn decision Wednesday morning

- Selection - For quality of statement
- For diversity of composition

B. Reasons I am interested in the Subject

1. Increasing involvement in international affairs

- AEC - U₃O₈
- Mining business
- Manufacturing - subsid abroad
- CFR
- MIT Fellows in Africa 1960-66
- MIT Fellows in Colombia 1964-67
- OECD 1961-70
- UN - 1963-71

Global Perspectives

- SCEP
- SMIC
- UN Conference
- COR

Bern

World Dynamics

Limits of Growth

New Projects

Sense of Discontinuity

Perceptions of change lag reality

Distortion due to short time-scales

Decline of institutions

- Government

- Churches

- School

Rising Chorus of warnings

- no consensus re time and scale of crises ahead

Need for a system for modelling

behaviour of main variables over time

2. System Dynamics

- Systems from physical world

- Non-linear feedback

- Industrial Dynamics 1960

Urban Dynamics 1968

World Dynamics 1971

Limits of Growth 1972

Subsid Papers

- Features for the non-expert

- Relationships in clear prose can go in

- Accessibility of assumptions

- Rigor of definition

- Interaction over time

3. History of World Dynamics Project

- COR 1968

1970 - Problem - no methodology JWF

1970-72 - MIT Team

- Products Lo G

Papers

Tech Vol

March - Washington

Spread abroad - catalyzed work in many places

4. Limits of Growth

- Chapters - scope of each

- Alternative runs - assess effects on technol./
pol./soc. changes

- Main conclusions

- Global debate

Main criticisms

- data

- deterministic

- science underated

5. Limits of Literature

- Principally on reasons for concern

- Paucity of postulation of societal models
which may be sustainable

- Great differences in options for industrialized and less developed countries

6. Importance to those under 30

- You'll be less than 60 in 2000
- Your children if any will be less than 30
- The lead-times for change are very long
- Need visions of viable societies of high quality which may be sustainable
- Synthesis of such visions and validation of quality requires creative imagination
- Likely to be found in those like you who have a very large stake in the outcome
- CLW can only guide and criticize - no special expertise
- See schedule for semester for preliminary ideas

Discussion

A Seminar on

Strategies for Sustainable Growth

(Among other things
including passionate
controversy)

The world-wide debate
stimulated by the Limits of Growth (copy)
by the MIT System Dynamics group
reveals the almost ^{scarcely} complete lack
of studies and writing on such
subjects as - ^{features of} the steady state
society; Transition to Dynamic
Equilibrium; ~~Strategies for~~
Reducing Wasteful Consumption;
Value Structures and Motivations
in the steady state society; ~~and~~
~~many other~~ ^{and} historical examples
and their relevance to "post
industrial" societies; ~~and the~~
~~assessment of~~ ~~Reexamination~~
~~of the observations and models~~
~~of political philosophers~~ ^{from}
Plato to Hobbes to Huxley to
Garrett Hardin, is needed,
Limits of Growth (by Meadows, Meadows,
Randers and Behrens - Universe Press
Paperback \$2.95) was introduced

at a symposium on 2 March 1972
sponsored by the Club of Rome,
The Woodrow Wilson International Center
for Scholars, The Smithsonian Institution
and Paton Associates. As of
this time editions have appeared
in _____ languages and others
are in preparation. This world-
wide ~~activity~~ ^{publication} has been brought
about by the Club of Rome which
sponsored the study at MIT which
led to the Report.

Discussion and debate
on these matters is lively
at all levels in ~~gover~~ national
and international institutions
Much of it centers now on
the validity of the models
World 2 and World 3 conceived
first by Prof Jay Forrester in
1970 and presented in his
book World Dynamics (Wiley
Allen Press 1971) and on the

validity of the assumptions held by so many economists that scarcities will be readily met by the price mechanism which will introduce substitutions which will flow everlastingly from the cornucopia of science and technology.

~~Some~~
~~Other~~ ~~groups~~

A few

~~Some~~ groups are beginning to focus their attention on ~~the~~ ~~the~~ modes of sustainable growth, ~~and~~ - material, institutional, ~~spiritual~~ intellectual and spiritual. One such group is the Woodrow Wilson ~~Center~~ International Center for Scholars at the Smithsonian Institution in Washington.

~~The seminar for~~

The MIT Seminar
 (~~15, 9 - 53 - 00~~) to
 be held weekly on ~~Wednesdays~~
~~3-5 in Room~~ will continue
 through the full academic year.
 It will be limited to about
 15 participants with preference
 being given to graduate
 students at MIT and
 Harvard. A requirement will
 be demonstrated ability to
 write. Each term the
 participants will be expected
 to write a major paper on
 some aspect of the subject.
 This will require unequal work
 because the literature is
 so sparse. It is hoped that
 the best papers may be published
 together in a book in mid-
 1973. It is possible that a
 2-3 week summer project in
 1973 may be organized

To bring together a number of the Seminar participants and others to make an assessment of ~~our~~ the state of knowledge and ~~how~~ ~~to~~ the ~~prognosis~~ ^{of research} and experimentation ^{which are} needed - in the manner in which the SCFP and SMIC studies were made at Williamstown and Stockholm in 1970 and 1971.

Details are as follows:

- Subject - 15. ? 3-6-8 ?
(Special studies in Management)
 - Title - Strategies for Sustainable Growth
 - Time - Wednesdays 3-5 pm
(ment-over)
 - Place - Sloan Building - 50 ^{Marwood} ^{Dural}
Room
 - Eligibility - (see other side)
 - Professor - Carroll L. Wilson
(relevant c.v. attached)
- Room Number & Telephone

Parent P3 under Time

First meeting Wednesday 13 September
It will be assumed that those
attending will have read the
Limits of Growth.

Eligibility - ~~Open to~~ Preference
given to graduate students
from MIT, Harvard
and Wellesley - Total
number about 15.

Information relevant to
Seminar on Sustainable Growth
concerning Carnall L. Wilson

- Professor Sloan School of Management
- System Dynamics Steering Committee
- ~~Executive Committee Club of P~~
- Club of Rome Executive Committee
- Senior Advisor to the Secretary General -
U.N. Conference on the Human Environment
- Director
 - Study of Critical Environmental Problems (SCEP) 1970 - MIT Press Paperback October 1970
 - Study of Man's Impact on Climate (SMIC) - MIT Press Paperback September 1971
- Chairman World Peace Foundation
- Chairman International Centre of Insect Physiology & Ecology (Nairobi)
- United Nations Advisory Committee on the Application of Science and Technology ¹⁹⁶⁴⁻⁷¹
- Director - MIT Fellowships in Africa and Colombia Programs 1960-67
- Faculty in Mining and Manufacturing and General Managers US Atomic Energy Commission

The Reshouse

(To go on
Parter)

- A Seminar continuing through the academic year 1972-73 - ~~Limited~~ ^(15. in Fall Semester)
~~Parter~~ ~~Parter~~
- Participation limited to about 15 with preference given to graduate students from MIT, Harvard and Wellesley.
- Times - 3-5 Pm Wednesdays
- Place - Room _____
Sloan Bldg 50 Memorial Drive
- Professor - Carnall L. Johnson

A Seminar on
Strategies for Sustainable Growth

The world-wide debate stimulated by the LIMITS OF GROWTH by the M.I.T. System Dynamics Group reveals among other things including passionate controversy the scarcity of studies and writing on such subjects as Features of the Steady State Society; Transition to Dynamic Equilibrium; Reducing Wasteful Consumption; Value Structures and Motivations in the Steady State Society; and historical examples and their relevance to "post industrial" societies. LIMITS OF GROWTH (by Meadows, Meadows, Randers and Behrens - Universe Press paperback \$2.95) was introduced at a symposium on 2 March 1972 sponsored by the Club of Rome, the Woodrow Wilson International Center for Scholars, the Smithsonian Institution and Potomac Associates. As of this time editions have appeared in _____ languages and others are in preparation. This world-wide publication has been brought about by the Club of Rome which sponsored the study at M.I.T. which led to the report.

Discussion and debate on these matters is lively at all levels in national and international institutions. Much of it centers now on the validity of the models World 2 and World 3 conceived first by Professor Jay Forrester in 1970 and presented

in his book WORLD DYNAMICS (Wright Allen Press 1971) and on the validity of the assumptions held by so many economists that scarcities will be readily met by the price mechanism which will introduce substitutions which will flow everlastingly from the cornucopia of science and technology.

A few groups are beginning to focus their attention on modes of sustainable growth material, institutional, intellectual and spiritual. One such group is the Woodrow Wilson International Center for Scholars at the Smithsonian Institution in Washington.

The M.I.T. seminar to be held weekly will continue through the full academic year. It will be limited to about 15 participants with preference being given to graduate students at M.I.T. and Harvard. A requirement will be demonstrated ability to write. Each term the participants will be expected to write a major paper on some aspect of the subject. This will require original work because the literature is so sparse. It is hoped that the best papers may be published together in a book in mid 1973. It is possible that a 2-3 week summer project in 1973 may be organized to bring together a number of the seminar participants and others to make an assessment of the state of knowledge and the programs of research and experimentation which are needed--in the manner in which the SCEP and SMIC studies were made at Williamstown and Stockholm in 1970 and 1971.

Details are as follows:

Subject - 15 ? (Special Studies in Management)

Title - Strategies for Sustainable Growth

Time - Wednesdays 3:00 to 5:00 p.m.

First meeting Wednesday, 13 September. It will be assumed that those attending will have read LIMITS OF GROWTH.

Place - Sloan Building, 50 Memorial Drive, Room _____

Eligibility - Preference given to graduate students from M.I.T., Harvard and Wellesley - total number about 15.

Professor - Carroll L. Wilson (room number and telephone)
(relevant CV attached)

15.963 Questions for discussion November 15, 1972

1. Is the American consumer through his buying behavior, the prime cause of growth? (Bill Martin)
2. No question obvious. (Kie Wei Tung)
3. Assuming a stable state economy, what criteria (hopefully quantifiable in a useful way) should be used as a basis for a decision in questions of resource allocation? (Dale Runge)
4. How can state legislation be developed to limit per capita consumption equitably? How can the "over-consumption" problem be best presented to stimulate intelligent discussion of the problem which would lead to realistic legislation in this area? (Rebecca Cook)
5. What part do effluent charges and depletion quotas play in managing renewable and nonrenewable resources and aspects of environmental quality? Is minimizing total consumption or consuming according to some depletion quota based on a time horizon a better economic, political, social policy? (Tony Picardi)
6. Within the present social and economic order in the USA our experience of being humanly fulfilled is closely tied to notions of what constitute "incentive", "competition", "meaning", and "excellence." Explore the present and possible future content of these notions and determine if and how they are essential to our feeling humanly fulfilled. (David Gray)
7. How can the concept of "diversity" be extended to other fields besides landscape and animal species and how is it measured? How does one decide how much diversity is "necessary" and how are alternatives maintained? (Jan-Olaf Willums)
8. No question obvious. (David Weir)
9. Does a growth economy stimulate mal-distribution of income? Does mal-distribution of income (wealth) stimulate growth? How? (Bill Behrens)
10. How can scenarios aid in the direction of the course and, more importantly, the understanding of the constraints of sustainable growth? (John Seeger)
11. What will determine bank lending rates in a steady-state society? (John Strongman)

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Key variables level of FP
Services available

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Engines of Change

- Dairy Food Factory in Kas.

George L.

Sant and

Clam and Consumption

- Denial from
work

T W Th
AAS - 26-27-28

L. to S.

Econ & ent

Gen & Ecology

~~Brieg in AAS~~

[Dec 13th]

John Collins - Company Games -

Ecology -

White Hertz Henderson

re Games

Limits Game -

APEX Air Pollution
Exercise

Math & Personality

~~Hierarchy of Needs~~

Maslow - Self Realization

Man
(ex Econ of scarcity)

Advertising
etc

George Lodge - Business Ideology
Gungah Panders - Human Movements

David Gray

— Brit PO

Study 2001

10

8th

9:30

(1)

Issues - Re Stationary / fuel combustion / Industrial

1. Significance of public health damage data re air pollutants (AECW + EPA studies) - epidemiological & other studies inconclusive. If principal purpose is aesthetic this should be clean to public.

2. Clarify real position - in terms of equity, practicability for control & enforcement ~~in the~~ concerning

a) - ambient stds for area vs

b) ^{point emissions} geographic differentials - urban vs non urban in terms of atmosphere ~~above~~ local

c) - Use of opacity ~~or~~ zero emission vs quantitative emission measures

~~Issue of~~

3. ~~3.~~ Priorities for largest sources - in terms of improving ambient quality largest emitters control yield maximum social returns vs differential impact of cost on large vs small emitters.

- (2)
- Cost-effectiveness of various degrees of emission reduction
4. A Series of Case Studies of extent of emission reduction and Cost (capital & operating) for both new & old installations
- Assessment of technology available
 - Now and in 2-4 years
 - Federal support of R & D
 - ~~Cost-effectiveness of various degrees~~
5. Variance procedures - Tentative and inflexible

6. Need for a Quality Management system with air sampling networks to give position, progress and adjustments of standards

7. Improvement of test procedures ^(and instrumentation) to determine ambient air quality and emission levels.

Olovo

Nov 22

- Seeger
- Turg
- Gray

✓ 1. IAP Days Jan 8, 9, 10

Who - Ophuls
Saxe
Daly
Lecturers - all are
on all 2-5
on all day

2. Nairobi & UK - ICIFE

✓ 3. Food Energy Study - outline
Scenarios

4. Time Tables - have some
not others

5.

Ophuls
Carbond
Daly

Model Gov &
Pub Policy
few handouts
Don't

Transition after 45 yrs

Murphy diversity

Role of family -
Don. Bell

Segment Centralized

Must find Political System
Compatible

Eric Erickson

Kellman - How
Social

H. Burr
WH - Steinbach

Dec 6th
617-548-1647 (1)

X Everett Rogers

Diffusion of Innovation

Copy of CW Edited

to Class

X

also Hazel - 3 papers

X Thucydides - Peloponnesian Wars

- Civilization - Compassion
means

- Kenneth Clark - Civilization -
Sense of Courage about future
Plan & Concern for "

Formatze -

~~Renderson~~

Future shock -

1st 30 page

last 30 "

Kenneth Boulding -
- meaning of the 20th Cent,
- } one article -

Boulding

From Class Nov 87

1. Set up Library in E-40

Nancy

copies of Bibliogr

- about 10 Refs most
want audit

- others -

- Build

24 hrs

- Rules - and overrule?

2. Memo to each re Papers

3. Jan 8, 9, 10 / Carhart
aphuls

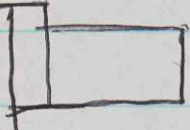
4.

11/29

(3)

Crafts in Williamsburg -

- 3 Dimensions: Security Analysis -

Social audits 

Steady State Society

- Maintain current
GDP / cap.

- Capital

Hertz

24.0

Consumption Equilibrium

11/29

(2)

Environ Paper Society

Adum

Kilocal = $\$$ current

Wallick - ^{Sept} Fortune act

Resources

ASME Paper No

72-WH/T5-1

C. Barus

Limits to Energy Release
and Implications for
Present Policy

Journal of Eng for Industry

Trans of ASME

Hazel Henderson

Nov 29th ①

Pulp & Paper - Examples

NYS

Env Perf

Entropy

Books

Resources

~~Hal & Penn~~
Hans

- Rodin
Entropy Law & Econ
Process

Welfare - What's wrong with
Econ -

Ward at Berkeley

Comparing Env Perf

15 Junestan owned

Price of Power

Stephen Berry - Thermodynamic
Study of auto -

4784

15.903 - Sept 13
150 session

<u>Name</u>	<u>Course</u>	<u>Class</u>	<u>Address</u>	<u>tel No</u>
Newall Mack	(6)	Newall Mack		
Alexandre J Gros	(5) X ✓	Alexandre J. Gros	20 Mt Auburn St Cambridge, Mass 02138	868-8339
George Derry	(4)	George Derry		
David Weir	(10) XV	David Weir	33 Reservoir St. Cambridge	876-7535 MIT ext 2657
Rebecca Cook	(3) X ✓	Rebecca Cook	73 Marlborough St. Cambridge Kennedy Sch	547-0783
Steve Wagner	(15) I ✓	Steve Wagner	7 Campbell Plk.	776-7989
TUNG, Kie Wei	(13) XV	Kie Wei Tung	88 Beacon St Apt 45 Somerville, Mass 02143	661-9939
Tony Picardi	(9) I		60 Wedsworth St #166 Cambridge, Mass.	494-8575
Dale Runge	(9) ✓		Powderhorn Pond, Plymouth	746-6065
Bill Behrens	XV (1)		223 Broadway, Cambridge	876-1695
JOHN SEEGER	(10) HARVARD		27 SEAGRAVE RD, CAMBRIDGE	547-5238
John Strongman	(11) XV		280 CONCORD AVE Cambridge	491-8308
JAN OLAF WILLUMS	(17) XIII / XV		54-1418	X 37828
David Gray				
HEINZ D. BESSLER	XI (3)		123 Sewall Ave. 3-A,	X 1781
Ramesh N. Vaidya	(14) XV	S.M.'73.	10C Westgate II, MIT,	X 3930
Wan Manli	(2)			
Fum Tomihino Taniguchi	XI, G			494-8770

① BILL MARTIN

29 Concord Ave #503

CAMBRIDGE, MASS

492-2449

SLOAN School MASTER'S STUDENT

David Badfuey Jr Esq.

David Bray - Harv

Dur School A.B.S

Christian Ethics & Instructs

J.M. - 426-9000

Thursdays - 2:30 - 3:30 6-120
10:30 - 12:30 52-153

K.901

RAY ~~50~~ Seakan
494-8123

Wed, 13 Sept 65.

52-365

Computer
STAT
Acct.
econ
H.B.
Lofb.

handed
m

~~000~~ 15,963
Sept 20 - attendance

Stephen Wagner Course I

✓ Tony Picardi Course I.

Dad Weir XV

✓ Kie Wei Tung XV

✓ Dale Ruge XV

George Denny Harvard

✓ John Strongman XV

✓ Tomihiro Taniguchi XI

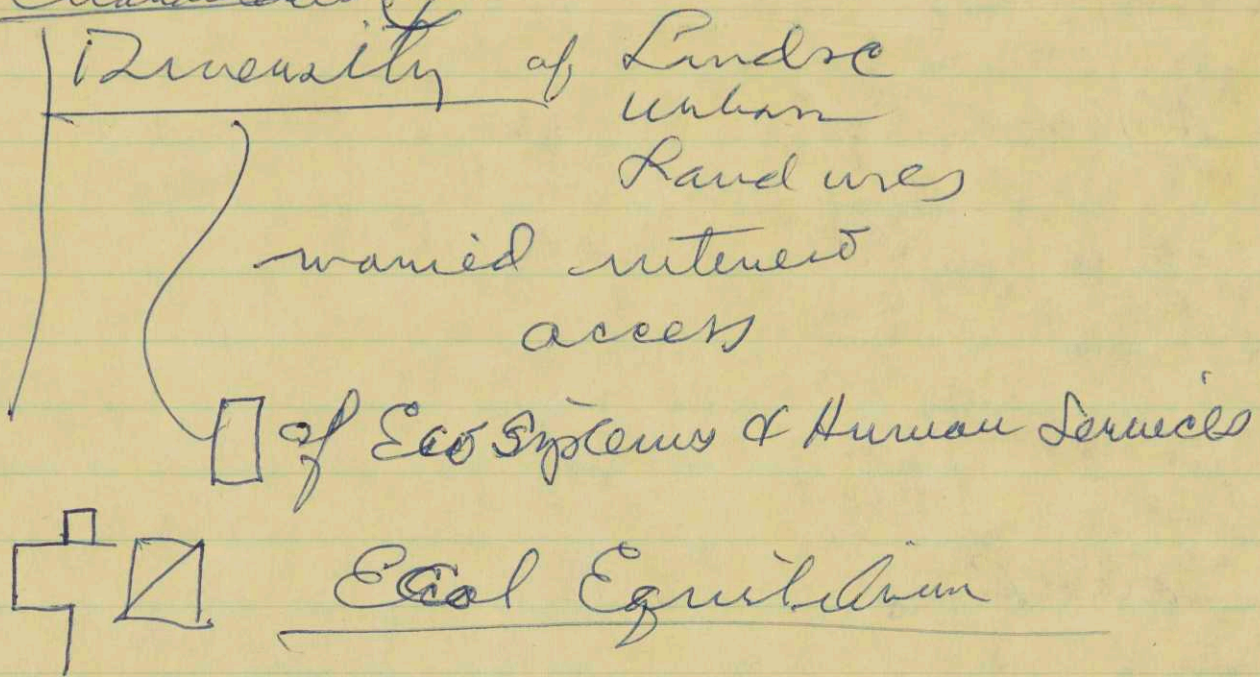
~~Sign~~

JOHN SEEGER HARVARD

Jan Olof Williams XIII / XV

✓ BILL BEHRENS XV

Goals + Time Horizon
Characteristics

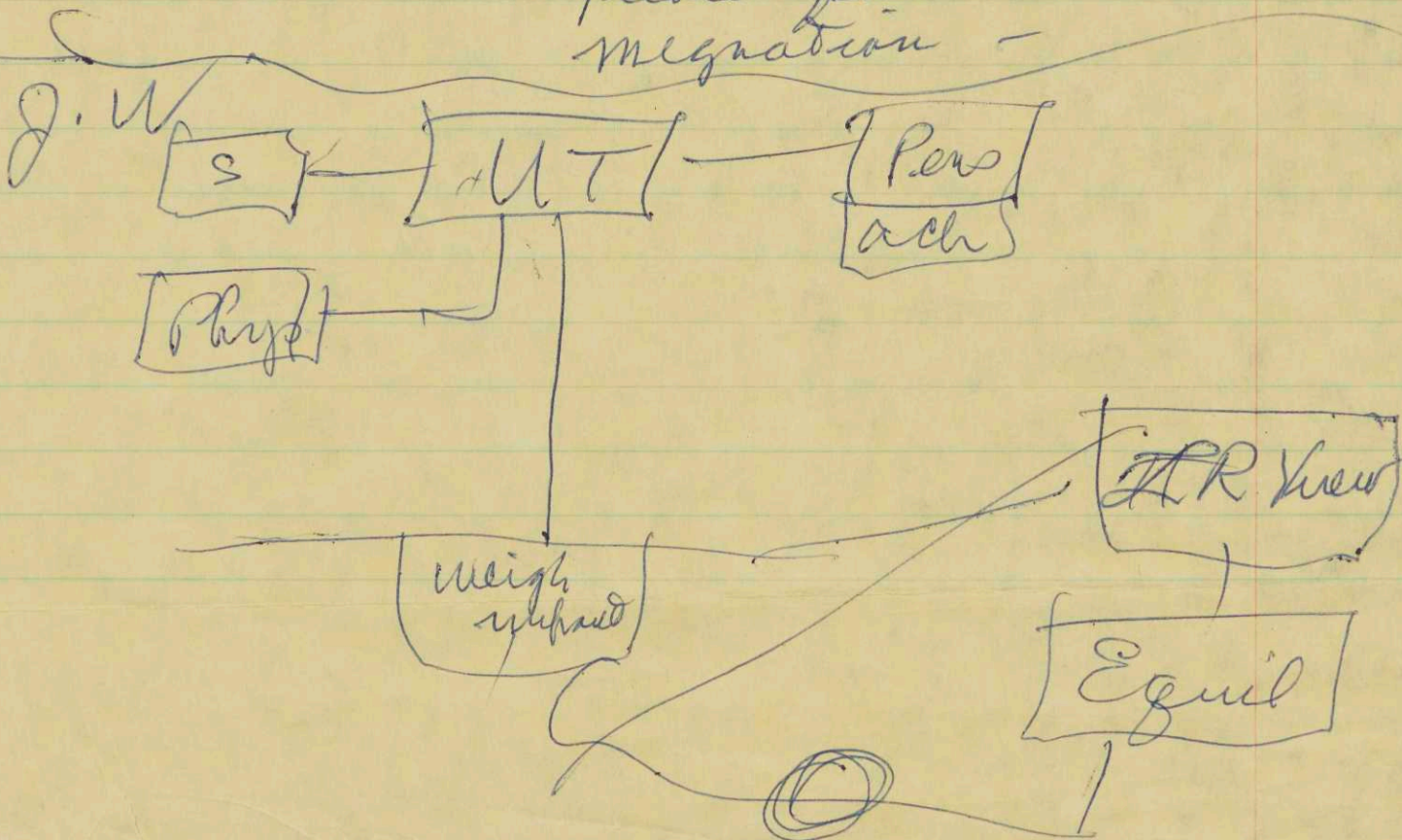


Individual Freedoms

- Polit. - speech, press, assembly, ^{access} media
- Environ. - ^{Relig} pub info, ^{panel} polit action

Polyploid

- Procreate - no
- Pollute "
- occup choice
- Peace + quiet
- Migration -



Tung - 10/25-15. No 3

(1)

Dall Runge - Goals +
value structure

↳ Is present market
maxim - in

Martin - Resilience to Steady-state
(Bessell -

- Protestant Ethic of Hand work?

Prandi - To what extent does
exogenous imposition
from above needed -

Godfrey - Lack of knowledge
of designing a living
Scheme.

Gray - Back into the Future

- Mind set - domination
- Profit
- growth

to Trusteeship

15.963 | 10/25

(2)

Money - New Cash -
dual currency system

/ - Cap gds

/ - check for service
goods

free / want

paid in service

hard / central

" " Capital

Daly -

Daly - Depletion Quotas -

Upper Limit on Capital -

ceilings & floors

Weir - Self Fulfillment

Cook - apply in USA

Util of Children as

Durable good

Age Structure

15.963

10/25

(3)

Willmott

Blueprinted too
Uniform
lack of diversity

4 Factors

(1) Decent. Decision making
or (Swiss structure)

- Decent agents &
incent.

(2)

(Smaller units / less
waste of resources if
no econ of scale

effici - Max util for min cost
non-renew resources

3 - Individualism - more social
feed-back - poor in
Int Ref

(Need contact with outside
world)

4 - Reduction of Ennira Support

Segment - Centralized

Advant without Disadv

15,963

10/25

(4)

- Not need for personal contact

- ~~Industry~~ Societies

- Legal Ctr / all legal teams
Same Ctr

- Main } Keep contact with
by Communication
/ no physical
Contact

[no contact

Every Ctr a specialty
Impose individualism

Transplantation? -

Seeger - think - where, what?

Paper to come

15,963

(1)

Notes for Sept 27th

1. Roll Cards for missing

- Williams
- Drummy ?
- Weir ✓
- Wagner
- Cooke - Rebecca ✓

Behrens letter

next week

2. Review of Items 9/20

A - Ten Points - discuss/elaborate

~~Definitions~~

- 2 - UN Data

- 3 - DAC

- 4 - Breakdown - Priv

Cap Exp - N Res

air

- 5 - Gap - World Bank

Report - figures -

- 6 - N/s - Rich / Poor

Res Imp / Res Exp.

B - Definitions - Cont & Change

Need to
accept
for Sem
Pump a
World
Picture

15.963 - Sep 27 (2)

3. Gale Seminar —
- Copies to Class. ✓

4. Bibliography - Review

Ecology

Blueprint - Read
before next week

- On 'act 4th
Jungen Rauders -

Reading - Farnerton

Churches at Transition

5. Reading for act 11th

- Blueprint.

Inherent Risks

Goals / Time Horizon
Rebus discounting value

- Archetomy Buddhist / Christian

- what constraints
Human

- just desert

- rights for nature

- Precede - Goals - religious

without goal - no consensus
- implicit

- Goal - maximize ^{all} satisfaction / future

- define satisf. / no one group

Soc Inplic Pap branch

Dean " " "

- Time Horizon - 9.5 - 2 gen.

STRATEGIES FOR SUSTAINABLE GROWTH 15.963 Seminar September 13, 1972

Behrens, Bill XV	223 Broadway, Cambridge 876-1695
Besser, Heinz D. XI	123 Sewall Ave. 3-A, x1781
Cook, Rebecca X (Kennedy Sch.)	73 Marlon St., Cambridge x2657
Derry, George	
Gros, Alexandre J. XV	20 Mt. Auburn St., Cambridge 868-8339
Mack, Newall	
Martin, Bill	29 Concord Ave. No. 503, Cambridge 492-2449
Picardi, Tony I	60 Wadsworth St. No. 16G, Cambridge 494-8575
Runge, Dale	Powderhorn Pond, Plymouth, 746-6065
Seeger, John (Harvard)	27 Seagrave Rd., Cambridge 547-5238
Strongman, John XV	280 Concord Ave., Cambridge 491-8308
Taniguchi, Tomihiro XI	494-8770
Tung, Kie Wei XV	88 Beacon St. Apt. 145, Somerville 661-8837
Vaidya, Ramesh N. XV	10C Westgate II, M.I.T., X3730
Wagner Steve I	7 Campbell Pk. 776-7989
Weir, David XV	33 Reservoir St., Cambridge 876-7535 X2657
Willums, Jan-Olaf XIII/XV	54-1418 X7828

godfrey, David Economics
gray, David (Harvard)
Div. School
HBS
Asian Ethics +

PROJECT ON SUSTAINABLE GROWTH
Dinner Seminar, October 30, 1972

Energy

GUEST LIST

Speaker: David Freeman, Director of the National Energy Policy Project

Members of the Energy Policy Project

- Table 2 Monte Canfield - Project Coordinator, Energy Policy Project
- Table 4 William Iulo - Senior Economist, Professor of Economics,
Washington State University
- Table 1 Walter J. Mead - Senior Economist, Professor of Economics,
University of California, Santa Barbara
- Table 3 Don Nicoll - Project General Consultant, former administrative
assistant to Senator Muskie
- Table 1 Thomas Stoehl - Consultant, Attorney with Natural Resources
Defense Council
- Table 4 Robert H. Williams - Assistant Professor of Physics and Research
Associate, Institute for Environmental Quality,
University of Michigan

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Other Guests of the WWC

- Table 2 Wallace Bowman - Chief, Environmental Policy Division, Library
of Congress
- Table 4 Lester Brown - Senior Fellow, Overseas Development Council
- Table 3 Jens Evensen - Director General, Legal Section, Ministry of
Foreign Affairs, Norway
- Table 4 Ed Freed - Senior Fellow, Foreign Policies Study Program,
Brookings
- Table 3 Walter Hamilton - Vice President of Public Affairs Research,
The Conference Board, Inc.
- Table 1 Joseph Lieberman - Senior Specialist, Environmental Policy,
Library of Congress
- Table 2 William Matthews - Assistant Professor, Civil Engineering, MIT
- Table 2 Dennis Meadows - Author of Limits to Growth, Professor,
Dartmouth College
- Table 4 Roger Naille - Participant in Limits to Growth Project, Dartmouth
College faculty
- Table 1 Gerald Pollack - Corporate Planning Department, Standard Oil Company
- Table 1 Joel Rahn - Participant in Limits to Growth Project, Dartmouth
College faculty

- Table 3 Charles Scarlett - Economist, Standard Oil Company
- Table 4² Robert Stein - Environmental lawyer, Alumnus of WWICS
- Table 3 Carroll Wilson - Professor, Sloane School of Management, member of Executive Committee, Club of Rome

Woodrow Wilson Center Staff

- Table 3 Ben Read - Director, Woodrow Wilson Center for International Scholars
- Table 4 Albert Meisel - Deputy Director, Woodrow Wilson Center
- Table 4 Michael Lacey - Assistant to the Director, Woodrow Wilson Center

Woodrow Wilson Center Fellows

- Table 3 M. Baldwin - Attorney, Senior Legal Associate, The Conservation Foundation
- Table 1 R. Brown - Legal Consultant to the Government of Tanzania on international and commercial affairs
- Table 2 H. Blaney - Foreign Service officer on assignment as Special Assistant to the Chairman of the Council on Environmental Quality
- Table 2 C. Cooper - Coordinator, WWICS Growth Study Program, former government official, research administrator, author
- Table 2 L. Costa-Pinto - Professor of Sociology, University of Brazil
- Table 1 L. Gordon - Political economist, former Professor of International Economic Relations, Harvard University
- Table 1 S. Huq - Economist, former Minister of Education and Scientific Research
- Table 3 J. Milton - Ecologist, Deputy Director for International Programs, The Conservation Foundation
- Table 3 F. Murphy - Professor of History - Academia Alfonsians, Rome; Visiting Professor of Politics, Princeton University, 1971-72
- Table 2 C. Nader - Political Scientist, Associate Director, Oak Ridge National Laboratory, National Science Foundation Environmental Program
- Table 2 R. Ojikutu - Senior Research Fellow (Anthropology and Human Biology), School of African and Asian Studies, University of Lagos
- Table 1³ A. Pardo - Minister of Ocean Affairs, Government of Malta; Permanent Representative to the United Nations
- Table 4 E. Rabinowitch - Editor, Bulletin of Atomic Scientists, Journal for Science in World Affairs
- Table 4 A. Spilhaus - Oceanographer, environmentalist; President, American Association for the Advancement of Science, 1970-71

12 September 1972
Carroll L. Wilson

Notes on 15.963 Preliminary Schedule

Wednesdays

3:00-5:00 p.m.

52-365

- September 13 - Rationale - Review of Limits of Growth
History of System Dynamics Literature
General Plan for the Year
- September 20 - Global Political Setting
A. 1945-
B. 1945-1970
C. 1970-2000
- September 27 - Roles of Institutions in A, B and C
- October 4 - Definitions - Growth
- Sustainable
- Stable Society
- October 11 - Options for Industrialized Countries
Options for Less Developed Countries
- October 18 - Value Structure - Changes and the Role of Churches
- October 25 - Energy - Demand/Supply
Levels as Social Index
Impact on Climate
- November 1 - Non-fuel Minerals - Choices and Limits
- November 8 - Food
- November 15 - Some Basic Boundary Conditions of Stable Societies
- November 22 - Illustrative Life Styles in a Stable Society
- November 29 - Historical Examples of Stable Societies
- December 6 - Economic Viability of a Modern Stable Society
- December 13 - Institutions
- December 20 - Transition from Here to There

- Possible five-day full-time session during IAP in January
- Second semester to be focussed on Models of Steady State Societies - their institutions, value structures, etc.
- Major term paper by each participant each semester; the best may be assembled as a book.
- Guest discussion leaders from time to time